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Economic Transformation in Theory and Practice

What are the Messages for Africa?

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ABSTRACT

Encouraging signs of growth acceleration in Africa may herald a new development era of rapid transformation. In an effort to promote the future success of African transformation, we herein provide an extensive literature review on development economics and empirical observations from successfully transformed countries, along with analytic narratives on the transformations of Thailand and Mexico. To conclude, we derive six key messages for African transformation. We find that the traditional development economics theory is consistent with the transformation practice of successful countries. However, this theory needs to be broadened in light of rising inequalities during transformation. Success vitally depends on agricultural development; early withdrawal of public support away from agriculture slows down transformation, and the resulting inequalities are recognized as a persistent development challenge. Transformation also depends on industrialization strategies, but we find that winner-picking industrialization negatively affects other aspects of development, whereas home-grown, export-oriented industrialization led by private entrepreneurs opens up broader opportunities for sustainable growth. Finally, government support will be required to create a business-promoting environment and to offer incentives for African entrepreneurs to lead growth.

Keywords: economic transformation, structural change, agricultural growth, Mexico, Thailand, Africa

1. INTRODUCTION

Beginning in the mid 1990s, African economic growth started to recover from a long period of low and even negative growth rates. Annual growth rates averaged 4.4 percent during the first seven years of the new millennium, and growth accelerated during this period, reaching 6.1 percent in 2007 (World Bank 2008a, Binswanger and McCalla 2008).[1] In several countries, including those that are not mineral-rich, the growth rates were even higher. Countries such as Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Rwanda and Tanzania all experienced average annual growth of 5 to 9 percent from 2000 through 2007. While Nigeria has benefited from the recent oil boom, the non-oil sector, which includes agriculture, has grown at a higher rate than the oil sector (Nigeria Bureau of Statistics 2007).

The recent growth in Africa has been the consequence of political and macroeconomic stability, improved domestic policies, and favorable terms of trade for a number of commodities exported by many African countries. According to Binswanger and McCalla (2008), 22 African countries held elections in 2007, and all these elections were declared "free and fair." Armed conflicts decreased down to 5 from 15 in 2003. In this improved environment, most countries' governments have identified growth acceleration as the centerpiece of their development strategies. The heads of states of most developing countries and the New Economic Partnership for African Development (NEPAD) have also committed themselves to the Millennium Development Goals (MDG), thereby empowering African countries to develop and implement their national strategies.

The global environment has also been conducive for growth, and the emergence of several large developing countries (e.g. China, India, and Brazil) has significantly changed the international landscape. Globalization has begun to link growth in these and other developing countries with further development in Africa, with the result that African countries are experiencing both new opportunities and new challenges.

Obviously, if African countries manage to sustain their recent economic performance, rapid growth would be expected to result in substantial structural changes within these economies. The goal of reaching middle-income country status has been explicitly written into the development strategies of some African countries (e.g. Ghana, National Development Planning Commission 2005 and Nigeria, Nigeria National Planning Commission 2007) or included in the countries' visions for 2020 or 2030. However, moving from low- to middle-income status requires more than an increase in per capita income; it involves transformation as an important part of development.

Understanding how to accelerate and support transformation in Africa poses an important challenge to policy makers and economists. The industrial planning strategies of the 1960s and 1970s led to a macroeconomic collapse from which many African countries have never recovered. The policy passivity and "markets only" strategies of the 1980s and 1990s, as promoted by the Washington Consensus successfully enhanced macroeconomic stability in the region, but failed to promote structural transformation and sustained growth. The limited success of these previous experiences in Africa compared to the successes seen in many Asian and Latin American countries raises several important questions. First, are the development literature and empirical realities of countries that have successfully transformed their economies relevant for the case in Africa? Second, what roles should be played by private entrepreneurs and the public sector in initializing and sustaining transformation? Third, how do policies during the early stages of transformation shape a country's long-term development path, and what is the role of agriculture in this process? To address these questions, we herein combine an extensive literature review with a cross-country comparative analysis and two in-depth country narratives.

The paper is organized as follows. In Section 2, we analyze the stylized facts of transformation, review development economics theory, and summarize the large issues and debates in this field. We focus largely on the period from the 1950s through 1980s, a time that not only bred "great theoretical innovation and controversy" (Lewis 1984a: p1), but also saw both successes and failures in the transformations of many countries. In Section 3, we analyze select transformation characteristics of

[1] In this paper, "Africa" refers to Sub-Saharan Africa.

countries that successfully transformed between 1960 and 2005. To gain a deeper understanding of transformation and its related policy processes, the second part of Section 3 includes analytic narratives for selected countries. While the experiences of many developing countries in Asia and Latin America are relevant for Africa today, we herein focus on Thailand and Mexico as case studies because these countries at their early stages of development shared certain similarities with many African countries today. The concluding section discusses the key messages for Africa that emerge when we synthesize the findings in Sections 2 and 3.

2. STYLIZED FACTS AND SOURCES OF ECONOMIC TRANSFORMATION – THEORY AND EMPIRICAL EVIDENCE

Stylized Facts of Transformation

As put forth by Lewis (1984b: p4), "[t]he economist's dream would be to have a single theory of growth that took an economy from the lowest level past the dividing line of $2,000, up to the level of Western Europe and beyond." However, in a more realistic quest to better understand development, economists are increasingly promoting a country-specific approach for the identification of growth opportunities and constraints to prosperity (Rodrik 2003). This approach focuses on the dynamics of development, where "change is central, history matters, structures are endogenous, and learning is at the heart of the story" (Stern et al. 2005: p86). Despite the lack of a general theory, however, it is commonly agreed that the process of economic development is characterized by a period of rapid per capita growth combined with structural change. While structural change can be defined as an alteration in the relative importance of economic sectors, the interrelated processes of structural change that accompany economic development are jointly referred to as *economic transformation* (Syrquin 1988).[2]

Although no single theory fully describes the transformation process, it can generally be described by several *stylized facts* that almost universally characterize the outcome of this process.[3] These transformation patterns can be observed in newly industrializing countries in Asia and Latin America, yet also relate to the experiences of European countries during the 19th and early 20th centuries, and are as follows. First, economic structure changes significantly during the transformation period, when industrialization triggers a rapid increase in the share of manufacturing in the economy, and a concomitant decline in agriculture's share (Chenery 1960, Kuznets 1966, Chenery 1968). Second, the share of the total labor force employed in the agricultural sector falls, while that in other economic sectors rises. However, that does not imply an absolute decline in the number of laborers employed in the agricultural sector, as the share of agricultural employment in the total labor force can decline relatively slowly compared with declines in the agricultural sector's GDP share in the economy (Fisher 1939, Hayami and Ruttan 1985). Third, within this process, the center of the country's economy shifts from rural areas to cities, and the degree of urbanization significantly increases (Kuznets 1966, Stern et al. 2005).

Shared growth is one of the most important objectives of economic development. However, there have been very few countries (e.g. Korea, Taiwan and China) in which income inequality has improved during transformation. Instead, the transformation process in most developing countries has been associated with uneven growth and rising income inequality across sub-national regions, population groups and individuals. Kuznets (1955) suggested that income inequality might follow an inverse U-shaped relationship during the development process. The Kuznets curve predicts that industrialization leads to an initial increase in inequality, followed by a decline in inequality as the process continues. However, empirical evidence for the validity of this prediction remains weak, and inequality has actually risen in many developed countries over recent decades (World Bank 2008a).

Thus, transformation involves the *modernization* of a country's economy, society and institutions. Economic transformation has fundamental impacts on human life, and sociologists emphasize the important role of changing values, norms, beliefs and customs in the transformation from a traditional to a modern society (for an overview, see Brohman 1997). Kuznets describes the necessary adjustments in society and institutions during transformation as a "controlled revolution" (Kuznets 1973: p252). Shifts in production structure lead to changes in incentive structures, educational requirements, and the relative positions of different groups in society. Urbanization leads to shifts in family formation, gender relations and personal status. Changes in transport and communication services open up less favored areas and

[2] We accept Syrquin's (1988) definition of economic transformation, to which we refer throughout this paper.

[3] Stylized facts are empirical regularities observed in a "sufficient number of cases to call for an explanation that would account for them…independently of whether they fit into the general framework of received theory or not" (Kaldor 1985: p8-9).

connect factor and commodity markets. The management of these fundamental changes requires legal and institutional innovations, in which the state and other institutions play key roles (Kuznets 1973). While we acknowledge that the modernization of society and its institutions often occurs concurrent with successful economic transformation, it remains difficult to integrate these changes into a single, consistent analytic framework.

Sources of Transformation

Many development economists summarize the sources of transformation into different groups, but these groups are often interlinked and sometimes hard to separate. Based on a review of the development economics literature of the past 40 to 50 years, we group the sources of transformation into four different aspects and focus on different authors' views on the roles of these aspects in the transformation process.

Technology-led Productivity Growth

Productivity growth characterizes the process of transformation and the move from a traditional to modern economy. Advancing innovation and technology adoption is therefore a "permissive" source, i.e. a necessary condition for development (Kuznets 1973: p247). Entrepreneurship and human capital plays an important role in this process. Schumpeter points out that entrepreneurs are important drivers of development, through a process of "creative destruction" (Schumpeter 1947). Technology-led, rapid productivity growth typically occurs during the industrialization process; hence, early development theorists discussed this process mostly in the context of industrialization.[4] Less emphasis has been given to the transformation of agriculture through productivity growth during economic transformation.[5]

Lewis' dual economy theory was the first seminal contribution to understanding how technology-led productivity growth in the industrial sector leads to economic transformation (Lewis 1954). Observations on the streets of Bangkok inspired Lewis to hypothesize the existence of a large traditional sector in which "the marginal productivity of labor is negligible, zero or even negative" in many low-income developing countries (Lewis 1954:p140, Lewis 1979). The difference between a leading modern sector (often the industrial sector) with higher productivity and a lagging traditional sector (often the agricultural sector) with lower productivity, combined with an unlimited supply of labor from this traditional sector (which keeps economy-wide wages down), allows production to grow in the economy through the migration of labor from the traditional sector to the modern sector. Led by productivity growth in the modern sector, the dual economy will eventually converge to a mono economy with equalization in the economy-wide marginal productivity of labor and full employment. Fei and Ranis further extend (or improve) the dual economy theory and point out the possible negative implications of agriculture's role in economy-wide growth within this model (Fei and Ranis 1961). According to the zero marginal productivity assumption, labor migration out of the traditional agricultural sector should not negatively affect agricultural production. However, Fei and Ranis identify two turning points at which the withdrawal of labor affects agricultural output. They argue that if the withdrawal of labor causes food supplies to decline or the marginal productivity of labor in agriculture to rise to levels that are equal to the marginal productivity in the modern sector, then growth in agriculture can constrain growth in the modern sector (Fei and Ranis 1961). While the passive role of agricultural growth in overall growth is taken into account by this the Fei and Ranis model, the positive or active role of agriculture in the process of economic transformation is not.

Schultz was among the first economists to emphasize that productivity-led agricultural transformation can make a much more important contribution to economy-wide transformation than merely providing surplus labor and savings to support industrialization (Schultz 1964, 1968). According to Schultz efficient but poor hypothesis, farmers should be seen as entrepreneurs even within traditional

[4] See Krueger 1988 for a further discussion regarding early work on industrialization.

[5] Industrialization can be defined as a process wherein the importance of manufacturing increases and changes are seen in the composition of industrial output and production techniques (Chenery 1960: p635).

agricultural systems. The low marginal productivity seen in agriculture before transformation is due to the fact that factors employed in agriculture are traditional. Incentives for farmers to invest in these traditional factors are low unless farmers have the opportunity and incentive to transform the traditional agriculture of their "forefathers." In Schultz' view, the existence of a micro foundation for farmers to adopt modern technologies can make agriculture an important driver of growth. Jorgenson also disagrees with the assumption of zero marginal productivity in agriculture. He emphasizes the role of agricultural productivity growth, stating that "unless technological progress in agriculture is sufficiently rapid to outpace the growth of population and the force of diminishing returns in land and other factors, the industrial sector may not become economically viable" (Jorgenson 1961: p311). In a similar vein, Kuznets emphasizes the potential of agriculture in transformation. He finds that since agricultural growth is higher during periods of transformation compared to pre-transformation levels, the industrial revolution is, in fact, always accompanied by an agricultural revolution (Kuznets 1966). In further examining the role of agriculture for growth, Tiffin and Irz (2006) find that agriculture has been the engine of growth in most developing countries, i.e. causality runs from agricultural growth to economy-wide growth most cases. Irz and Roe (2005) show that even small variations in agricultural productivity have had strong implications for the rate and pattern of economy-wide growth. The authors, hence, conclude that low agricultural productivity can severely constrain overall growth.

The *Green Revolution* not only reinforced the view that technology-led productivity growth can transform traditional agriculture into a modern sector, but also showed that agriculture helps accelerate the economy-wide transformation process. Evidence suggests that the rapid agricultural growth in many Asian and Latin American countries in the 1960s and 1970s was driven by the adoption of new farming technologies, including the use of irrigation, high-yield crop varieties, and modern inputs such as fertilizer. Based on empirical evidence from India, Hazell and Ramasamy (1991) argue that one of the attractions of green revolution technologies is that they are, in principle, scale-neutral. However, this scale neutrality is primarily observed in cereal production and mainly occurs in Asia,[6] where adoption of these technologies raised the yields and incomes for both small- and large-scale farmers, thereby helping to alleviate absolute rural poverty. This occurred because productivity increases took place in the *existing* on-farm resources of land and labor, and required only few scarce resources, such as farm-level capital. A Green Revolution, thus, often involves the majority of farmers in a developing country and significantly increases agricultural productivity over a relatively short period of time. Besides many well known success stories among Asian countries, such as in India and China, Mexico is regarded as an example of an early successful Green Revolution in Latin America (see Section 3.3). Mexico's average national wheat yield in 1960-61 was 2.5 times higher than the average national yield a decade earlier, and about 98 percent of the annual wheat harvest in the latter time period involved improved wheat varieties (Schultz 1964: p149). The recent World Development Report (WDR), which compares productivity growth in agricultural and non-agricultural sectors over the past 15 years, shows that labor productivity in agriculture grew faster than that in non-agriculture when considering agriculture-based and urbanized developing country groups, whereas labor productivity in agriculture increased more slowly than that in non-agriculture among transforming countries. However, even in the latter country group, agricultural labor productivity still grew faster than the population, at 2.2 percent annually between 1993 and 2005 (World Bank 2007: p39).

The findings of the WDR (2008) further support the arguments of Hayami and Ruttan (1985) that despite the success of the Green Revolution in Asia and Latin America, agricultural productivity is still low in developing countries, and the agricultural productivity gap between low- and high-income countries has continued to increase. However, modern agricultural technology has continued to improve in high-income countries, and agricultural innovation and knowledge spillovers are typically linked to technical changes in the rest of the economy. Thus, there is still plenty of room for many developing

[6] Gafsi and Roe (1979) show, based on observations of Tunisian agriculture, that irrigation technology, fertilizer use, and pest and weed control are not necessary scale-neutral in North Africa.

countries, especially those in Africa, to catch up with agricultural innovations in the developed world and launch a new Green Revolution.

Both agricultural economists and general development economists emphasize the important role played by the public sector in technology development, and the importance of local adaptation for agricultural transformation. The national or international transfer of agricultural technology involves the adaptation of location-specific technology to different environmental conditions (Hayami 1974: p131). This means that public institutions must conduct adaptive research, whereby agricultural experiment stations promote research outcomes and improve the capabilities of regional farming populations. Such public spending should also be combined with conventional public investments in roads, transportation, and irrigation facilities, which together form the most important and successful government interventions in an early Green Revolution. Today, public investments in rural infrastructure, including irrigation, roads, transport, power, telecommunication, market development, rural finance, and research are considered the most important factors for long-term agricultural development (World Bank 2007: p114).

However, recent studies also emphasize the importance of the efficiency and sequencing of public investments. Economic outcomes are often unsatisfactory and many public resources are wasted when public spending and policies are biased towards large-scale production and the estate sector. This sector often constitutes a small share of total production, and such policies ignore the majority of smallholders (as seen in many African countries during the late 1960s and 1970s. For example, large-scale state farms throughout Africa absorbed substantial public resources in the 1960s to 1980s (Meier 1989). Furthermore, the resources spent on agricultural input and other subsidies have often been used inefficiently and ineffectively. In Zambia, for example, until very recently about 80 percent of the non-wage agricultural budget was spent on agricultural subsidies, whereas the spending on research, extension services and rural infrastructure (i.e. investments that have shown high payoffs) accounted for only 15 percent of this share of the budget (WDR 2008: p115). The efficiency of public investment is also constrained by institutional capacity. For example, there is no doubt about the importance of irrigation for the success of the Green Revolutions in Asia and Latin America, but an important factor in this success was the existence of a relatively complex institutional capacity, along with the management experience to efficiently operate irrigation systems. The institutional capacity and its important role in transformation is discussed further below.

Rapid Capital Accumulation

Technology-led productivity growth is typically accompanied by rapid *capital accumulation*, as most technologies are embodied in modern capital goods. The deepening of the capital in the overall economy as well as in agriculture has been observed in all successfully transformed countries. Early development economists in the 1950s and 1960s emphasized the role of capital investment in industry as a means for rapid growth and transformation in low-income countries (Chenery 1960, Kuznets 1961, Rosenstein-Rodan 1964). This view is supported by the successful reconstruction in post-World War II Europe', where investments in infrastructure and industry were an important component of rapid economic recovery and growth (Krueger 1988). Several empirical studies have confirmed the important role of capital accumulation in rapid growth, showing that the share of investment in GDP increases significantly during the transformation process (Kuznets 1961, 1966; Syrquin and Chenery 1968). To finance these investments (and subsequent industrialization), early development economists paid special attention to increasing a country's saving rate. Against this background, the dual economy model treated the agricultural sector as a surplus provider to finance the process of industrialization. This rationale served as a major argument for developmental planners to introduce agricultural export taxes, high tariff protection in industry and other measures (e.g. overvalued exchange rates) aimed at transferring resources from agriculture to industry (Krueger et al. 1991). However, Kuznets pointed out that "one of the crucial problems of modern economic growth is how to extract from the product of agriculture a surplus for the financing of capital formation necessary for industrial growth without at the same time blighting the growth of agriculture" (Kuznets 1961: p115). Unfortunately, the governments of many developing countries, especially those in Africa and Latin America, did not manage this well; the transfers from

agriculture to industry often hurt growth in agriculture, particularly under the urban-biased growth strategies of the 1970s to 1990s.

Schultz argued that the accumulation of capital is a necessary but not sufficient condition for transformation, especially in the case of agriculture (Schultz 1964). In this view, the profitability in the agricultural sector is low when agriculture employs only traditional factors. Low returns to agricultural investment explain the minimal saving behavior of farmers and the low accumulation rate of traditional factors. However, Schultz proposes that farmers will have an incentive to invest in agriculture as soon as their investments become profitable. This was demonstrated during the Green Revolution, when farmers changed their investment and savings behavior following the introduction of modern technology that were developed by public and non-farm sectors, and supported by with public investments in irrigation and infrastructure.

The Role of Linkages

While productivity growth and capital accumulation are important elements of transformation, together with changes in consumer demand (which are not discussed in detail herein), they also further enhance economic inter-linkages during the transformation process. Hirschman (1958) was among the first development theorists to emphasize the backward and forward linkages created by capital investments in the industrial sector. Johnston and Mellor (1961) thereafter extended this concept by going beyond industrial sectors and explicitly emphasizing the interactions between agricultural and non-agricultural sectors. In this view, agriculture should not be seen merely as a source of surplus to support industrialization, but as a dynamic source of growth, employment and more equal income distribution. Inter-sectoral relations between agriculture and non-agriculture will likely determine the course of transformation in many developing countries. While the share of agriculture in the economy will decline over the longer run as transformation progresses, successful agricultural development in the short- and medium-run is a prerequisite for transformation (Meier 1989). This dynamic role of agriculture is embodied in the process of transforming traditional agriculture into a modern sector, as this process enhances both consumption and production linkages between agriculture and non-agriculture and between rural and urban areas. The backward linkages occur through increased demand of agriculture for modern inputs, such as fertilizer (produced by the manufacturing sector), and marketing and trade (provided by service sectors). The strongest backward linkages are the consumption linkages, which are especially strong in low-income countries, leading to higher growth multipliers and poverty reduction effects (Delgado et al. 1996, Christiaensen et al. 2006, Diao et al. 2007, World Bank 2007). A stagnant agricultural sector is therefore likely to inhibit industrial and service sector growth (because the farmers lack purchasing power), whereas agricultural productivity growth will allow higher agricultural output at lower costs. This allows agriculture to provide cheap raw materials for various industries (e.g. food processing), thereby opening up opportunities for the development and diversification of food manufacturing and marketing activities.

The existence of these linkages between a modern agricultural sector and the rest of the economy also poses several transformation challenges. Modern inputs used in agricultural production are often not produced locally. Fertilizers are imported into many developing countries, making these countries' agricultural sectors more import-intensive. In addition, many modern inputs (e.g. improved seeds) are often location-specific, meaning that it is not sufficient to merely import existing varieties. Instead, local research institutions must perform adaptation studies and develop new forms that are appropriate to the given country (Schultz 1964). Finally, supply of modern factors within a country also depends on factors and activities outside of agriculture. Hence, transforming agriculture requires increased efficiency and modernization across the whole economy (Hayami and Ruttan 1985).

The Roles of Market, Institutions, and Governments in Transformation

Institutional change in general and market development in particular are necessary parts of transformation. As stated by Matthews (1986), the choice of technique or institution may affect both

institutional change and market development, albeit in opposite directions. Most economists agree that the quality of institutions can explain differences in growth and transformation processes by shaping incentives to develop new technologies and innovation (Rodrik et al. 2004, Easterly and Levine 2003). Moreover, by drawing lessons from studies in several countries, Rodrik finds that the onset of the transformation process does not necessarily require extensive institutional reform, but rather institutional reform should be seen as an endogenous part of the transformation process (Rodrik 2003).

Technology-led productivity change involves the intensive use of modern inputs purchased from markets. The availability of seasonal financing, more developed marketing systems, and supply chains built around smallholder farmers becomes increasingly important in agricultural transformation, requiring simultaneous and complementary investments in all links of the supply chain. However, coordination, opportunism, rent-seeking costs, and risk can all complicate the effectiveness and efficiency of such simultaneous investments (Poulton et al. 2006). The lack of market institution development and investment in infrastructure and information systems results in high transportation and transaction costs, forcing farmers to remain within a traditional, subsistence mode of production. Moreover, increased use of modern inputs and growing agricultural production can significantly increase the market and profitability risk of small farmers in the process of transformation, further lowering their incentive to adopt any new technology.

The active role of the state in transformation during the 1950s and 1960s was based on the optimistic view that transformation or development in general can be accelerated by a defined series of policies and direct public interventions. The pre-World War II economic crisis, the existence of market under-development, and the pervasiveness of market failure in developing countries forced many governments to engage in central planning. Additionally, the apparent initial success of central planning in many Eastern Bloc countries further encouraged governments to rely on the "commanding heights" of the state rather than the market (Yergin and Stanislaw 1998). The core elements of this strategy included planned investment in capital accumulation, utilization of rural surplus labor reserves, adoption of import substitution industrialization (ISI) strategies, and a series of policy interventions in international trade and domestic markets.

To finance state-led industrial development, governments often discriminated against agriculture and other export-oriented sectors. Overvalued exchange rates, high import duties on intermediates and capital goods, and heavy taxation of agricultural exports all undermined the role of sectors that would otherwise have had comparative advantages for leading growth and structural change (Krueger et al. 1991). Within agriculture, the most important state interventions during the 1960s to 1980s were the direct involvements of governments in market activities. Input and output marketing and processing facilities in many developing countries (especially in Africa) were almost always operated by semiautonomous government or parastatal agencies, or by mostly government-initiated cooperatives on a monopoly basis. However, the operations of most public marketing agencies tended to be costly and inefficient because of overstaffing and inexperienced management. In addition, small-scale private trading, often operating in informal, traditional markets, was discouraged. According to the WDR 2008, public expenditure reviews suggest that a large share of public spending in agriculture has been allocated to providing private goods at high costs in many countries, even in recent years.

Direct government interventions aimed at correcting market failures frequently resulted in extensive "government failures[7]", which inhibited positive market responses and development. Although market failure is often the result of inappropriate incentives rather than the lack of responsiveness (Krueger 1986), 20 years after inception of the World Bank/International Monetary Fund (IMF) structural adjustment programs (SAP), which sought to right prices and correct markets, underdeveloped markets are still a predominant phenomenon in many African countries, particular for staple commodities that are produced by a majority of small farmers. However, in many other developing countries, especially in successfully transforming countries, a great deal of progress has been made, primarily led by the private sector. In Africa, inadequate transport infrastructures and services in rural areas continue to push up

[7] Government failure is the public sector analogy to market failure.

marketing costs and undermine local markets and export opportunities. Public market information systems have often yielded disappointing results, and price-risk management through the public sector is still inefficient. There is a general lack of a consistent legal and regulatory framework that encourages free market competition and guides the private sector and farmers, and contract enforcement mechanisms continue to be weak.

A large agenda remains for improving the performance of marketing systems in developing countries. The existence of both market failures and government failures calls for a better understanding of the interaction between the public and private sectors and the role of institutions in transformation. Such an understanding is often country-specific, and the path to the successful transformation of institutions in general and to market development in particular often requires experimentation, a willingness to depart from orthodoxy, and attention to local conditions (Rodrik 2003). However, recent market developments under globalization and the rapidly growing local and international demand for agricultural products have opened up important new opportunities for developing countries to find their paths to transformation through the joint efforts of private and public sectors.

Summary of this Section

Economic transformation, as part of development, can be defined as a dynamic process through which a country's economy, society and institutions modernize and move to more developed levels.

The dual economy theory has traditionally regarded the industrial sector as the only modern sector driving transformation, whereas the traditional agricultural sector has been regarded as a provider of surplus, both of labor with little or no marginal productivity, and of savings to finance industrial sector investments. Policy makers in Africa and other regions have often followed this theory by taxing agriculture in order to support industrial development. However, many development economists assign agricultural transformation a more active and important role in the development process and treat farmers as entrepreneurs. According to this view, successful agricultural transformation in the short and medium-run is a prerequisite for transformation, especially in agriculture-based economies such as those in Africa.

The government plays an important role in agricultural transformation. Transformation is fostered by public investments in irrigation, agricultural research, and the development and adaptation of new technology, in addition to more conventional and broader public expenditures for roads, electricity and other infrastructures. However, many African countries have a poor record of efficiency and sequencing of these public investments. In addition, public spending and policies in many African countries have been biased towards large-scale production or agricultural subsidies, which have historically led to disappointing economic outcomes.

The efficiency of public investment is often constrained by a given country's institutional capacity, which is especially important for managing the provision of more complex public good-type systems and facilities (e.g. large-scale irrigation systems). Direct government interventions aimed at correcting market failures have frequently resulted in extensive "government failures" in many developing countries. This dilemma between market failures and "government failures" calls for a better understanding of the interaction between the public and private sectors and the role of institutions in transformation. This requires a country-specific approach and involves a process of experimentation, willingness to depart from orthodoxy and attention to local conditions (Rodrik 2007).

3. TRANSFORMATION IN PRACTICE: LESSONS FROM SELECTED DEVELOPING COUNTRIES

In the previous sections, we reviewed and summarized major sources of transformation and its universal outcome. However, these factors have worked together to create this outcome through a number of diverse pathways in different countries. This diversity is often the consequence of the interactions between initial endowments (e.g. the size of a country, its natural resource conditions, and the initial social, political and institutional arrangements), and the policies and strategies implemented during the transformation process. For example, a natural resource-rich country might generally seem to have more options during the transformation process. However, possible Dutch disease effects, such as a high dependency on resource exports and adverse impacts on economic diversification, can significantly constrain a resource-rich country's development path (Breisinger and Thurlow 2008). In addition, rent-seeking and corruption have often undermined effective spending of royalty streams, leading to subsidization of high costs, unproductive sectors, and distorted markets (Collier 2007). Furthermore, different institutional arrangements and the mode of distribution and allocation of natural resource rents can determine the transformation process and its outcome, as do internal conditions and ethnic fragmentation. Rodrik (1999) shows that the countries with the sharpest growth decline after 1975 were those with divided societies and weak institutions.

Countries with sea access have traditionally been regarded as having a natural advantage over landlocked countries. However, the lack of sea access is not necessarily a constraint for transformation, as demonstrated by both the success of many landlocked countries and the lack of success of some countries having sea access. Collier therefore adds the "bad neighborhood" dimension to the issue (Collier 2007). According to this theory, neighboring countries with sea access are not only important for providing a connecting route to international markets, but a "good" neighborhood itself can produce spillover effects between neighbors. However, recent observations of structural change, especially regarding the rapidly declining rural share in total population in many low-income countries, particularly in Sub-Saharan Africa, shows that structural change can occur without growth and transformation. These initial conditions, which differ from the descriptions of early development economics theorists in the 1960s and 1970s, should be taken into consideration when seeking to understand the future transformation of Sub-Saharan African countries (Headey 2008).

External conditions in the global environment have also greatly impacted countries' transformations and are likely to remain important in the future. It is widely accepted that the end of World War II and the beginning of the Cold War significantly increased the support of Western countries for selected developing countries. Korea, Taiwan, and other Asian countries benefited from this support, which is seen as a necessary condition for their successful transformation. From the late 1980s and early 1990s onward, the fall of the Berlin Wall provided new opportunities for many former socialist Eastern European countries and sparked their rapid economic growth and transition to market-based economies (Yergin and Stanislaw 1998).

Today's globalization is also likely to significantly shape the way many developing countries will transform in the future. More recent examples of successful transformation in China, India and Vietnam suggest that globalization offers developing countries the opportunity for rapid economic growth and expansion, especially through export-oriented manufacturing and services. The success of many Asian countries poses opportunities and challenges for African countries seeking to transform. Rapid Asian growth has accelerated the demand for many primary commodities produced by African countries.[8] At the same time, however, the comparative advantage of Asian countries in manufacturing might make it more difficult for African countries to enter the global market now compared to past years. In any case, opportunities arising from globalization can only be realized by a combination of country-specific institutional conditions and country-owned and -driven developmental strategies. Keeping in mind that both internal and external conditions vary between countries and over time, we will review the

[8] For a discussion of the impacts of Asian growth on African development, see Breisinger and Thurlow (2008).

transformation records of selected developing countries in the following section. Learning from past experiences and considering new developments today can advance our understanding of the opportunities and challenges that many African countries will face in the future.

Transformation in Practice – An Overview

To better understand alternative paths of economic transformation for African economies, we can examine developing countries that have already reached or are on track to reach middle-income status. Such descriptive comparative studies have become more prominent in recent years. Leipziger (1997) compares the public policies of East Asian tiger states and draws lessons on the effectiveness of industrial development strategies. Rodrik (2003) compiled a series of eight country-specific narratives to help identify the major causes that determine economic growth and prosperity. For the purpose of the present paper, it is essential to review as many developing countries as possible that have gone through a significant transformation process in recent history. Over the past four decades, many countries have reached middle-income status, although some have subsequently lost this status. We therefore first analyze the growth history and structural changes of countries that have moved out of low-income status. We then select two countries for a more in-depth analysis.

According to the World Development Indicators database (WDI 2007), there were 58 low-middle-income and 40 upper-middle-income developing countries in the world in 2005. Together with the 54 countries classified as low-income developing countries, these 152 countries form the "developing world." Here, we first examine the initial income of the 98 countries that were listed as middle-income in the 1960s,[9] and select those with income levels comparable with those of current low-income countries as potential candidates for further analysis. Among the 58 low-middle-income countries in 2005, only 34 offer time series data beginning in the 1960s or 1970s and running up through recent years. Among the 40 upper-middle-income countries in 2005, similar data were available for 24 countries. Therefore, the requisite historical data are available for 58 countries. Among the 34 low-middle-income countries considered, 75 percent had per capita gross national incomes (GNI) (measured at current US dollars)[10] below or around $200 in the early years of our dataset. Another four had per capita GNI below $400 by the end of 1960s.[11] Among the 24 upper-middle-income countries with available data, five had a per capita GNI below or around $200 during this period, while eight had a per capita GNI below $400.[12] Among the current low-income developing countries, 11 and 14 had per capita incomes below or around $200 and $400, respectively, in 2005. Lists of the low- and middle-income countries are provided in the appendix.[13]

The majority of developing countries, including many of those that are currently middle-income countries, were extremely poor and backward four decades ago. This was the shocking reality faced by early development economists, and it is against these initial conditions that the early theoretical and policy debates took place and the transformation of many countries began. Thus, we examine the initial conditions and changes in these countries, in order to analyze how they have moved out of low-income status and what major characteristics defined their transformation processes.

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[9] The data in the World Development Indicator database start in 1960.

[10] We use per capita GNI for our country selection in order to be consistent with the World Bank's country income status classification, in which low-income countries in 2005 are defined by a per capita income of less than $US 905 (current) gross national income (GNI), while those of middle-income countries range from $US 906 to $US 11,115 GNI (World Bank 2008b).

[11] There are only three current low-middle-income countries with per capita GNI higher than $400 in the first year of the 1960s or 1970s for which data are available.

[12] Korea is the only one of the studied countries that had a per capita GNI below $400 in the 1960s, but it has recently become a high-income Organization for Economic Cooperation and Development (OECD) country.

[13] However, the income gap between the rich and the poor countries is significantly wider today compared to 40 years ago. In the 1960s, per capita income of OECD countries was about 20 times higher than per capita income of the low-income country group. This disparity rose to 60-fold in 2005. The income gap between the OECD countries and the low-middle income group remained unchanged, approaching that of the upper-middle income group.

Less than half of the 39 selected countries fulfill the following criteria: (1) data are available for the 1960s and 1970s; (2) per capita income was below $400 in the 1960s; (3) the countries have become middle-income countries in the years since, with per capita GDP over $1,000; and (4) the country is not classified as mineral resource-rich. While a few mineral resource-rich countries have experienced rapid income growth and successful economic transformation, many of them have become middle-income countries without significant development. We therefore decided not to include these countries in the following analysis; instead, we focus on countries that may provide more valuable lessons for the current low-income African countries, namely those that started their transformation at income levels below or similar to the current levels in many African countries, reached or closely approached middle-income status over a relatively short time period, and showed rapid growth that was not primarily driven by natural resource booms.

Seventeen non-mineral-rich countries became middle income countries during the last four decades, reaching a per capita income of $1,000 or more in recent years. In the following analysis, we focus on 15 of these countries, excluding two small countries (Guyana and Swaziland) due to their small population sizes of less than two million. We include India and Vietnam in our analysis; although these two countries have not yet reached middle income country status, their rapid growth indicates their potential to do so within the next few years. Thus, their economic development can provide important additional information for this study. Table 1 provides a list of the 17 countries considered herein, grouped into three regions, namely Latin America, Asia and Africa.

Table 1. GNI per capita in current 2005 $US for the 17 middle-income developing countries

	Year with GNI pc around $200	GNI pc ($US)	Year with GNI pc around $1,000	GNI pc ($US)	Number of years required to become MIC
Brazil	1960	208	1975	1,128	15
Dominican Republic	1960	205	1980	1,123	20
Costa Rica	1960	377	1976	1,111	16
El Salvador	1960	241	1992	1,102	32
Paraguay	1965	211	1989	1,087	24
Mexico	1960	343	1974	1,233	14
China	1982	201	2001	1,027	19
India	1978	203	2005	731	
Indonesia	1974	204	1995	1,018	21
Malaysia	1960	289	1977	1,050	17
Philippines	1972	205	1995	1,114	23
Sri Lanka	1973	217	2005	1,182	32
Thailand	1972	213	1988	1,144	16
Vietnam	1994	221	2005	615	
Egypt, Arab Rep.	1970	216	1996	1,086	26
Morocco	1963	214	1990	1,038	27
Tunisia	1961	202	1979	1,050	18

Source: Calculated using WDI 2007.

Note: India and Vietnam had not yet reached middle-income country status by 2005. GNI stands for gross national income. MIC stands for middle income country.

Table 1 also reports the years in which these countries' per capita GNI amounted to around $200 and $1,000 or more, respectively (for India and Vietnam, per capita income is reported for 2005, since they have not yet reached $1,000). Starting from per capita incomes of around $200, 12 countries reached per capita incomes of $1,000 within 30 years, with eight countries reaching this level within 20 years. To analyze these periods of accelerated growth in more detail, Table 2 first reports the average annual GDP

growth rates of the 17 countries during the 45-year period between 1961 and 2005, then divides this timeframe into three periods, namely those of accelerated growth,[14] growth collapse, and recovery after growth collapse. The table also shows the different growth rates, the length of each period, and the beginning and end of each period.

Table 2. GDP growth rate for the 17 middle-income developing countries

	Average annual growth 1961 - 2005	Accelerated growth period			Growth collapse/stagnant period			The most recent growth after growth collapse	
		Period	Annual growth rate	Number of years	Period	Annual growth rate	Number of years	Period	Annual growth rate
Brazil	4.4	1961 - 1980	7.8	20	1981 - 1992	2.3	12	1993- 2005	2.5
Dominican Rep.	5.0	1966 - 1983	7.2	17	1984 - 1991	2.5	15	1992 - 2005	5.6
Costa Rica	4.6	1962 - 1979	6.6	17	1980 - 1986	0.6	7	1987 - 2005	4.8
El Salvador	2.2	1961 - 1978	5.0	18	1979 - 1990	-0.9	11	1991 - 2005	3.5
Paraguay	4.6	1967 - 1981	7.7	15	1981 - 1987	1.0	7	1988 - 2005	2.1
Mexico	4.1	1961 - 1981	6.6	21	1982 - 1993	1.8	12	1994 - 2005	3.1
China	8.6	1978 - 2005	9.8	28					
India	4.7	1991 - 2005	6.1	15					
Indonesia	6.2	1968 - 1997	7.1	30	1998 - 2001	-0.4	4	2002 - 2005	4.9
Malaysia	6.8	1961 - 1997	7.0	37	1998 - 2001	2.9	4	2002 - 2005	5.7
Philippines	3.6	1973 - 1983	5.3	11	1984 - 1993	2.1	10	1994 - 2005	4.0
Sri Lanka	4.6	1973 - 1985	5.3	13	1986 - 1989	3.0	4	1990 - 2005	4.7
Thailand	6.9	1961 - 1996	7.6	36	1998 - 2000	-0.2	3	2001 - 2005	5.9
Vietnam	7.2	1988 - 2005	7.4	18					
Egypt, Arab Rep.	5.4	1969 - 1985	6.7	16	1986 - 1993	3.9	8	1994 - 2005	4.5
Morocco	4.1	1967 - 1980	5.9	14	1991 - 1997	1.9	7	1998 - 2005	3.6
Tunisia	5.1	1963 - 1981	6.5	19	1982 - 1989	3.4	8	1990 - 2005	4.7

Source: Calculated using WDI 2007.
Note: India and Vietnam had not yet reached middle-income country status by 2005.

Accelerated Growth in Transformation

Productivity increases and capital accumulation are essential ingredients of growth acceleration during the transformation process. The growth rates over the past 45 years (1961 – 2005) averaged 5.0 – 8.6 percent annually in eight of the examined countries, between 3.6 – 4.6 percent in eight countries, and only 2.2 percent in El Salvador. Generally speaking, the Asian countries (except for the Philippines) experienced the highest overall growth rates, while the growth rates were relatively low in the Latin American and African countries. Driven mainly by rapid Asian growth, the selected 17 countries as a group grew by 5.5 percent (or 5.1 percent without country weights) over the 45-year time frame. This growth is significantly higher than the growth of the world economy on average (1.7 percent) and that of the low-middle-income group as a whole (3.6 percent) over the same period.[15]

Breaking down the growth history of this 45-year span into three periods (one associated with relatively rapid growth, one associated with a slowdown or negative growth and one associated with

[14] The "growth acceleration period" refers to the period with relatively rapid and stable growth; this differs from the definition of Hausmann et al. (2004), who provided a specific measurement for growth acceleration.

[15] Only El Salvador and the Philippines have an overall growth rate of 3.6 percent or below.

growth recovery) the following phenomena can be observed for most of the selected countries during the growth acceleration period (Table 2):

(1) All 17 countries experienced a period of rapid growth; growth in this period averaged 7.0 – 9.8 percent for the eight fastest transformers and between 5.0 and 6.7 percent for the other nine countries.

(2) Most of the selected countries managed to maintain rapid growth for quite a long period; rapid growth occurred over 15 to 37 years in 14 countries, and between 11 and 14 years for the other three countries. Growth was relatively smooth during this period. While some of these countries experienced relatively slow or even negative growth, this slowdown rarely lasted for more than one year and growth acceleration continued in most cases. To measure the growth fluctuation, we calculate the coefficient variation (CV) using the actual annual growth rate. The CV value confirms relatively stable growth for most of the countries during their growth acceleration periods; it is less than 0.5 (i.e. the standard deviation of the actual annual growth rate in absolute terms is less than 50 percent of the absolute value of the average annual growth rate) for 14 of the countries, and between 0.56 and 0.66 for three countries in Latin America and Africa.

(3) Accelerated growth began either in the 1960s, as seen for the six Latin American countries and a few countries in the other regions, or in the early 1970s (excluding China).[16] These growth periods ended in the early 1980s in all six Latin American countries, three African countries and two Asian countries.

(4) Nine countries managed to raise their per capita income four or five times during their accelerated growth periods, while income growth in the other six (El Salvador, Paraguay, the Philippines, Sri Lanka, Egypt and Morocco) was much slower.

Exploring the characteristics that allowed these countries to enter a period of rapid and relatively smooth growth requires a series of in-depth country-specific case studies. As Rodrik (2004) points out, empirical cross-country analysis shows that growth acceleration tends to be highly unpredictable, and is not fully explained in all cases by conventional theories such as trade liberalization and political regime changes.

We observe more similarities than differences between the selected Asian countries and the selected countries in Latin America and Africa during the period of growth acceleration. However, the phenomena observed during and after the growth "collapse" periods differ substantially between these two country groups. Per Hausmann et al., a "crisis" is defined as an interval that starts with a contraction of per capita GDP and ends when the value regains the level seen immediately preceding the decline (Hausmann et al. 2006: p6). According to this definition, a relatively longer growth contraction period (between seven and 15 years) was observed for many Latin American and African countries, while in Asia (with the exception of the Philippines), the periods of growth contraction were relatively short (three to four years). It also took longer for Latin American and African countries to restore growth compared to restoration in the Asian countries, and annual growth rates following the period of growth contraction were relatively higher in the Asian countries than in the other two regions (again, with the exception of the Philippines). While the growth collapses were often directly triggered by external shocks, such as the oil price surges in the 1970s and early 1980s and financial crises in the early 1980s for Latin American countries and in 1997 for the Asian countries, within-country factors such as growth policies and strategies largely determined their country-specific outcomes. Therefore, country-specific studies of growth acceleration and periods of collapse should provide useful lessons for newly transforming countries. As a full study would be a complex and daunting task, we herein concentrate on the lessons that may be gleaned from studying the periods of growth acceleration.

[16] Growth acceleration actually started in the 1950 in the Latin American countries, but there is no consistent data available for this period.

The Role of Agriculture

The development economics theory reviewed in the previous sections highlighted the important role played by the agricultural sector in transformation. Accordingly, we herein investigate how the agricultural sector in the 17 selected countries performed during transformation.

Table 3. Agricultural GDP growth rate for the 17 middle-income developing countries

	Average annual growth 1965 - 2005	Accelerated growth period			Growth collapse/stagnant period			Recent growth after growth collapse	
		Period	Annual growth rate	No. of years	Period	Annual growth rate	No. of years	Period	Annual growth rate
Brazil	3.4	1965 – 1981	4.0	16	1982 - 1992	2.4	12	1993- 2005	3.9
Dominican Rep.	2.9	1966 – 1983	5.2	18	1984 - 1991	-0.7	7	1992 - 2005	4.2
Costa Rica	3.6	1965 – 1975	6.9	10	1976 – 1986	2.0	10	1987 - 2005	3.7
El Salvador	0.9	1967 – 1979	3.5	13	1980 - 1992	-0.9	13	1993 - 2005	0.8
Paraguay	4.3	1965 – 1981	5.2	21	1982 - 1987	1.4	7	1988 - 2005	3.6
Mexico	2.0	1965 – 1981	3.1	21	1982 - 1988	0.7	22	1989 - 2005	1.7
China	4.1	1978 – 1996	5.1	19				1997 - 2005	4.3
India	2.8	1988 – 2005	2.8	17					
Indonesia	3.5	1968 – 1989	4.0	22	1998 - 2001	1.7	4	2002 - 2005	3.3
Malaysia	2.5	1965 – 1989	4.0	18	1998 - 2001	0.8	4	2002 - 2005	4.2
Philippines	2.3	1965 – 1980	3.8	16	1984 - 1993	1.8	10	1994 - 2005	2.7
Sri Lanka	2.4	1973 – 1985	3.8	13	1986 - 1989	0.5	4	1990 - 2005	1.6
Thailand	3.2	1965 – 1985	4.6	24	1997 - 2001	1.5	4	2002 - 2005	1.9
Vietnam	3.9	1988 – 2005	4.1	18					
Egypt, Arab Rep.	2.9	1969 – 1990	2.9	21	1991 - 1994	2.4	4	1995 - 2005	3.4
Morocco	2.2	1965 – 1976	3.3	10	1992 - 2000	-0.8	9	2001 - 2005	6.9
Tunisia	3.7	1965 – 1981	5.7	20	1982 - 1989	2.5	8	1990 - 2005	3.4

Source: Calculated using WDI 2007.

Note: India and Vietnam had not yet reached middle-income country status by 2005.

The first column of Table 3 shows average annual agricultural GDP (AgGDP) growth rates over the last four decades.[17] The average AgGDP growth rates were significantly lower than overall GDP growth in most countries over this period. With the exceptions of Paraguay and China, no other country sustained average agricultural growth rates of more than 4 percent per year, whereas 15 countries had total GDP growth of more than 4 percent per year. However, the average annual AgGDP growth rate for the 17 study countries as a group (3.8 percent) is remarkably higher than the 2.1 percent annual growth of average world agriculture. It also compares favorably to the agricultural performance of the middle-income countries as a whole, which grew at 2.8 percent annually.

This relatively low agricultural growth rate can partially be explained by the high volatility of agricultural growth. In stark contrast to overall GDP growth, the CV value for the actual annual agricultural growth rate of 1965 – 2005 is higher than unit for most countries, as high as 11.2 for Morocco and between 2.2 and 3.7 for the other three countries (Dominican Republic, Costa Rica and Tunisia). Compared with the CV value for GDP growth, only China's agricultural growth is slightly less volatile than overall economic growth, while for the seven countries (Costa Rica, India, Malaysia, Sri Lanka,

[17] Lack of early 1960s-era agricultural data for many countries forces us to calculate the AgGDP growth rate for the period of 1965 – 2005, instead of the 1960 – 2005 period used for the GDP growth calculations in Table 2.

Thailand, Morocco and Tunisia), agricultural growth is 3 – 10 times more volatile than overall economic growth.

Highly unstable agricultural performance renders it difficult for a country to sustain accelerated growth. This is especially true for many African countries today, where rainfed agriculture dominates. To further select successful countries, we therefore define a 4 percent average annual growth rate over a period of more than ten years as the desired agricultural growth acceleration period. Applying this definition to our 17 study countries, we find that ten countries (five in Asia) experienced this duration of agricultural growth acceleration. Moreover, relatively rapid agricultural growth in the early years seems to be pertinent to overall growth acceleration in Asian countries, as supported by the observation that accelerated growth in agriculture and the overall economy occurred during the same years in all studied Asian countries. However, many of the Asian countries experienced agricultural growth deceleration concurrent with continued expansion of their economies. The lack of early 1960s-era data on agricultural growth in the Latin American and African countries prevents us from analyzing the relationship between agricultural growth acceleration and economic growth in these countries.[18] However, it appears that the same factors noted above as causing overall economic collapse, or external shocks such as oil price surges, were also likely to be responsible for the agricultural growth slowdowns in the Latin American and African countries.

Economic Structural Change

The decline of the agricultural sector's share and the increase of the non-agricultural sectors' share, particularly that of manufacturing, in a country's economy during transformation is one of the stylized facts discussed in the introduction. In this section, we therefore analyze changes in sector shares for the 17 countries. Table 4 presents the share of agriculture in the economy for the 17 selected countries.

Table 4. Share of agriculture in GDP

	Initial year with GNI pc around $200	Share of agriculture in GDP (%)	Year with GNI pc around $1,000	Share of agriculture in GDP (%)	Share of agriculture in GDP in 2005 (%)
Brazil	1960	20.6	1975	12.1	8.1
Dominican Rep.	1965	23.2	1983	20.1	12.4
Costa Rica	1960	29.4	1976	23.3	8.7
El Salvador	1965	41.4	1992	14.6	10.3
Paraguay	1965	36.7	1989	29.6	22.1
Mexico	1965	13.7	1974	12.0	3.8
China	1982	33.3	2001	14.1	12.6
India	1978	38.9	2005	18.3	18.3
Indonesia	1974	31.1	1995	17.1	13.4
Malaysia	1960	34.3	1977	26.5	8.7
Philippines	1972	29.5	1995	21.6	14.3
Sri Lanka	1973	27.3	2005	16.8	16.8
Thailand	1972	25.3	1988	16.2	9.9
Vietnam	1994	27.4	2005	20.9	20.9
Egypt, Arab Rep.	1970	29.4	1990	17.3	14.9
Morocco	1965	23.4	1990	17.7	14.1
Tunisia	1965	20.8	1979	24.4	11.6

Source: Calculated using WDI 2007.

Note: India and Vietnam had not yet reached middle-income country status by 2005.

[18] We analyze the case of Mexico in more detail in Section 3.3

The first part of the table shows the share in the year when growth started to take off. When per capita income was around $200, the share of agriculture in the economy was high for most selected countries; it was close to or higher than 30 percent in nine of the countries and higher than 20 percent in seven countries.[19] The only exception is Mexico, for which the per capita income had already reached $500 in 1965, the first year for which we have consistent agricultural data.

The second part of Table 4 presents the share of agriculture in each economy when the country reached a per capita income of $1,000. Although natural resource endowments and other initial conditions differ significantly across these countries, rapid growth was accompanied by significant structural changes in many of these countries. As shown in Table 4, we find no single country in which agriculture constituted more than 30 percent of GDP when per capita income reached more than $1,000, regardless of the country's size. The share of agriculture declines the most in Asian countries, even though agriculture had tended to grow more rapidly in prior years. However, agriculture still accounted for 29.6 percent of Paraguay's economy in 1989 and more than 20 percent of the economies in five other countries when their per capita incomes surpassed $1,000 (see Table 4, second part). The final part of Table 4 depicts the current share of agriculture in these countries' economies. As might be expected from the stylized facts, the share of agriculture continued to decline with further increases in per capita income. By 2005, Paraguay was the only country in which per capita income was higher than $1,000 and the agricultural share still constituted more than 20 percent of GDP.

The declining role of agriculture in the economy means that the non-agricultural sectors, such as industry and services, become more important for economic growth. Within industry, manufacturing is regarded as a main driver of transformation in development economics theory. This is consistent with the pattern of structural change observed in many OECD countries during their early development processes. Thus, we also analyze the changing shares of manufacturing for the 17 countries, as shown in Table 5.

Table 5. Share of manufacturing in GDP

	Initial year with GNI pc around $200	Share of manufacturing in GDP (%)	Year with GNI pc around $1,000	Share of manufacturing in GDP (%)	Share of manufacturing in GDP in 2005 (%)
Brazil	1965	22.3	1975	26.1	22.0
Dominican Rep.	1965	15.6	1980	15.3	15.1
Costa Rica	1965	18.4	1976	22.5	21.9
El Salvador	1960	15.6	1992	24.4	23.1
Paraguay	1965	15.5	1989	14.5	12.4
Mexico	1965	19.5	1974	22.8	17.7
China	1982	37.3	2001	31.6	33.5
India	1978	16.6	2005	15.7	15.7
Indonesia	1974	9.2	1995	24.1	28.1
Malaysia	1960	8.1	1977	19.2	30.6
Philippines	1972	26.5	1995	23.0	23.3
Sri Lanka	1973	17.4	2005	14.9	14.9
Thailand	1972	18.4	1988	25.8	34.7
Vietnam	1994	14.9	2005	20.7	20.7
Egypt, Arab Rep.	1974	17.8	1996	17.7	16.8
Morocco	1965	15.7	1990	18.4	16.6
Tunisia	1965	8.1	1979	20.2	17.5

Source: Calculated using WDI 2007.

Note: India and Vietnam had not yet reached middle-income country status by 2005.

[19] Among the 52 current low-income developing countries, 30 countries have an agriculture share in the economy over 30 percent, while the share of agriculture in 16 others is over 20 percent.

In most cases, the share of manufacturing in the economy at the beginning of transformation was relatively higher than that in many low-income developing countries today. Only three of the selected countries had a share of manufacturing in GDP less than 10 percent. In contrast, 32 of the low-income countries today have a less than 10 percent share of manufacturing in GDP. Four out of the 17 selected countries had a manufacturing share of GDP higher than 20 percent, while ten others had shares ranging between 14.9 and 18.4 percent during the initial period of transformation (see the first part of Table 5). In contrast, among the 52 current low-income countries (excluding Vietnam and India, which are included among the 17 selected countries), only two countries (Kyrgyz Republic and Cote d'Ivoire) have had an average share of manufacturing in GDP higher than 20 percent in the 2000s, and six have had shares between 15 and 19 percent. These findings indicate the importance of accounting for differences in initial structural conditions, and highlight the need to better understand and more realistically evaluate the role of manufacturing in the future transformation of current low-income countries.

Around the time the 15 selected countries reached middle income country status (i.e. not including Vietnam and India, which have not yet reached this status), the share of manufacturing in most of these economies either stayed high (if the initial share was high) or rose significantly (if the share was not high to begin with), winding up at levels above 15 percent in most cases, and close to 20 percent in 13 of the 15 countries. Malaysia and Indonesia provide two interesting cases, as their share of manufacturing in GDP was 8 – 9 percent at the time these two countries started their transformation. This share is comparable with that seen in many low-income African countries today. Both countries had a similarly high share of agriculture during the early stages of transformation. Thereafter, Malaysia more than doubled its manufacturing share (from 8 to 19 percent) within 17 years, while Indonesia raised its manufacturing share from 9 percent in 1974 to 24 percent in 1995. It is important to note that between the time when these 15 countries first became middle income countries and 2005, the share of manufacturing declined in all six of the Latin American countries (to a significant degree in two of them) and the three African countries, whereas it has risen in the selected Asian countries.

The service sector became more important in Brazil and Mexico during their later transformation periods. These two countries either became or are on their way to becoming upper-middle-income countries (per capita income is more than $7,000 in Mexico and more than $4,000 in Brazil in 2005). India also provides an interesting story in terms of service sector-led development, as the country's services seem to have played a leading role in driving the country on its way to becoming an middle income country. The share of the service sector in India increased from 36.6 percent in 1978 (at a per capita income level of around $200) to 54 percent in 2005. This growth was primarily driven by the information technology sector, which is export-oriented. In contrast, services are mainly non-traded in most low-income developing countries. Indeed, domestically-oriented services typically grow rapidly with income growth, since a country's average citizen tends to spend more on services as their income levels rise. However, the service sector consists of various and very diverse sub-sectors, including public and private, traded and non-traded, high and low value-added, knowledge-intensive and unskilled labor-intensive, etc. This makes it generally the most difficult sector to compare across countries, which is the main reason we do not herein examine changes in the service sectors of the selected economies during transformation. Although the service sector provides growth opportunities in the transformation process (mainly through consumption linkages), an export oriented service-led growth strategy deserves more careful cross-country comparative study before general conclusions can be drawn.

Urbanization

Urbanization and the increasing role of urban centers in transformation forms one of the stylized facts reviewed in the introduction. However, measurement of the urbanization process is not straightforward. While a decline in the rural share of total population is often used as a proxy for urbanization, the factors affecting this share go beyond simple economics. For example, there are issues in defining rural and urban areas; such definitions are often arbitrary, change over time, and vary across country. Moreover, even though the rural share in the total population may be declining, the rural population can still grow in

absolute terms, especially in countries with high population growth rates. With these caveats in mind, we present the rural share of total population in the 17 selected countries, as shown in Table 6.

Table 6. Rural share of total population

	Year	%	Year	%	Share in 2005
Brazil	1960	55.1	1975	38.3	15.8
Dominican Republic	1960	69.8	1980	48.7	33.2
Costa Rica	1960	65.7	1976	58.3	38.3
El Salvador	1960	61.7	1992	48.9	40.2
Paraguay	1965	63.8	1989	52.0	41.5
Mexico	1960	49.2	1974	38.0	24.0
China	1982	79.0	2001	63.3	59.6
India	1978	77.6	2005	71.3	71.3
Indonesia	1974	81.1	1995	64.4	51.9
Malaysia	1960	73.4	1977	60.6	32.7
Philippines	1972	66.0	1995	46.0	37.3
Sri Lanka	1973	80.5	2005	84.9	84.9
Thailand	1972	77.9	1988	71.1	67.7
Vietnam	1994	78.2	2005	73.6	73.6
Egypt, Arab Rep.	1970	57.8	1996	57.3	57.2
Morocco	1963	69.1	1990	51.6	41.3
Tunisia	1961	62.1	1979	60.6	32.7
Sub total	1960	79.9			58.1

Source: Calculated using WDI 2007.

The first part of the table presents the rural shares of total population in the initial years for which population data are available. The second part displays the shares in the year when each of the countries reached a per capita income level of $1,000 or more. As expected, the rural population share was high (above 50 percent) at low income levels. The shares range between 50 and 80 percent of total population in most countries in the initial year studied, and are generally much higher in the Asian countries compared to the other regions. The rural share of total population fell significantly around the time the countries became middle income countries, with the exception of Sri Lanka, where the rural share of total population rose. However, in 13 of the 15 countries, a majority of the population still lived in rural areas when the country's per capita income reached $1,000. The last part of the table presents the current (2005) rural share of total population. While two of the Latin American countries (Brazil and Mexico) have become "urbanized economies" with rural shares of total population below 25 percent, 11 of the studied countries retain a share of more than 40 percent and in some cases even more than 60 percent of the population lives in rural areas.

A decline in the rural population share does not necessarily correlate with a decline in the absolute number of rural people. Among the 17 selected countries, Brazil presents the only case where the rural population in 2005 was smaller in absolute number compared to that from 1960, even though this country experienced a total annual population growth of 2.1 percent over that period. Five more countries experienced negative rural population growth between 1990 and 2005; among them, four are Asian, namely China, Indonesia, Malaysia and the Philippines. In the remaining 11 countries, the rural population consistently rose in absolute terms throughout the transformation period.

We further compare the selected countries as a group with other groups of developing countries in terms of changes in rural share of total population and rural population growth rates. In the earlier dataset, the rural population accounted for 80 percent of the total population in the 17 selected countries

as a whole; this was slightly higher than the low-middle-income country group's average of 77 percent in the same year,[20] but lower than that of the low-income country group, which was 84 percent. In 2005, the rural share of total population in the 17 selected countries as a group was only 58 percent; this share was still higher compared to that of the low-middle-income group (51 percent) and much lower than that of the low-income group (70 percent) in the same year. Thus, compared with the low-income countries, the relatively rapid declines in the rural share of total population seen among middle-income countries support the stylized fact that urbanization constitutes a part of transformation. However, the speed of the urbanization process varied considerably among the 17 selected countries. Furthermore, 40 percent or more of the population still lives in rural areas in 11 of the selected 17 countries today, indicating that urbanization might be a much slower process than structural changes in the economic sectors.

Many significant differences among the 17 countries reviewed in this section have been omitted from this overview. While the countries share many broad patterns of transformation and 15 of the 17 have become middle income countries over the last 40 years, there are obvious differences in the development processes of these countries. The first significant difference is related to initial conditions that cannot be captured by the per capita average incomes. The initial distribution of assets (particularly land in rural areas) and income varies significantly across the selected countries. These initial asset distribution conditions did not change much over time, and the distribution of income actually worsened during the transformation period in most countries (WDI 2007). Periods of stagnant growth starting in the early 1980s lasted a rather long time in most Latin American countries, leading to increases of absolute poverty in some of these countries, particularly in rural areas. In fact, the recent national poverty rates were reportedly as high as 50 percent in the Dominican Republic and Paraguay (WDI 2007), making them comparable to or even higher than the poverty rates in many low-income countries. Moreover, extremely high Gini coefficients have been observed in many Latin American countries, including countries such as Mexico (0.46) and Brazil (0.57), where per capita incomes are as high as $7,000 and $4,000 (WDI 2007). While transformation does not require improvement in income inequality, increased inequality has definitely slowed down the development process in many countries and constitutes a significant challenge for the future.

Moving forward, in-depth case studies will be necessary for each of the selected countries, both to overcome the above caveats and because more elaborate comparative cross-country analyses can only be done after a comprehensive country-level analysis. We acknowledge the importance of country case studies, and herein focus on two countries: Thailand and Mexico. This country-level analysis is based on a thorough review of the current literature, focusing mainly on descriptive papers. Future work will be required to support related quantitative analysis.

Thailand – A Success Story in Economic Transformation

Understanding specific transformation paths and learning relevant and useful lessons for African countries requires country-specific study. For the purpose of this paper, we select two countries – Thailand and Mexico – from the 17 developing countries analyzed in the previous sub-section for further analysis as a country case narrative. Based on the development economics theory reviewed in Section 2 and the overview of general empirical evidence discussed in the first part of this section, we focus on the sources of growth, the contributions of public institutions and the private sector, and the role of agriculture, manufacturing and services in the transformation process.

We choose Thailand because this country shares several important characteristics with many African countries, especially in the agricultural sector. The first similarity is in the natural resource conditions for agricultural production. Unlike many other South and Southeast Asian countries, Thailand was a relatively land-abundant country until relatively recently (Falkus 1991: p59). Also similar to most Sub-Saharan African countries, Thailand's climate can be characterized as tropical wet and dry or "monsoonal." The second similarity relates to farm size, which is predominantly small in Thailand, as it is

[20] Thirteen of the selected countries belong to the lower-middle-income group.

in most African countries today. For example, the average size of land holdings in Thailand was 3 hectares in 1960 and 4.7 ha in 1990.[21] The third similarity refers to the extensive cultivation of rainfed crops, at least at the beginning of our study period. The rainfed nature of Thai agriculture has been reflected in generally low levels of crop yields, compared with those found in other Asian countries. Until the early 1980s, the yields of major crops in Thailand were comparable to the crop yields seen in many African countries today. Finally, Thailand features comparatively few areas of highly fertile soil (Donner 1978: p20), and few locations that allow for reliable cultivation of wet rice in the absence of effective irrigation and/or flood control (Dixon 1999). Thus, in many ways Thailand represents a country with relatively poor and unreliable initial conditions for agricultural production, meaning that it faced challenges similar to those confronting many African countries today. Taking these similarities as a starting point, we include experiences from other Asian countries in the following narrative, especially if they provide a useful contrast to Thailand's experience, and thereby help us hone our thoughts on the situation in Africa.

Thailand's rise to a newly industrialized economy is a success story for development. Although the country saw rapid growth and structural transformation beginning in the late 1970s, the modernization process actually started as far back as 1958, when the pursuit of economic growth was first established as one of the primary objectives of the Thai government, and a formal development framework for planning and implementing institutions was created (Muscat 1994: p88). Thus, we start our country review from the late 1950s on and analyze the transformation process until the late 1980s, when Thailand became a middle-income country.

Between 1958 and 1988, Thailand faced external conditions broadly similar to those in many other developing countries. A series of international shocks, including the 1973–1974 and 1979–1980 oil price surges, and the collapse of non-oil commodity prices in the early 1980s hit the world economy during this period. In addition, the implementation of the World Bank/IMF's structural adjustment programs challenged many developing economies and their policy makers. With 90 percent of its commercial energy produced from imported oil and a large export share of primary products, Thailand and its economy was vulnerable to these external shocks. Moreover and similar to the situation in many other developing countries, a series of domestic political shocks occurred during this period, particularly during the 1970s, when Thailand experienced political instability and a series of regime changes. Finally, similar to many other developing countries at their early development stages, Thailand adopted an import substitution industrialization (ISI) strategy during the early stages of transformation, although the policies supporting this strategy were implemented over a relatively long period.

However, in contrast to many of the other developing countries studied herein, which experienced the worst periods of their recent development history and experienced severe economic crises in the late 1970s or 1980s (see Section 3.1 for further discussion), Thailand managed to successfully transform its economy during this period, developing from one of the world poorest countries (per capita income of $100 in 1960) to a middle-income country, with a per capita income of more than $1,000 in 1988 and close to $3,000 in recent years. During this period, the industrial sector, particularly manufacturing, became the main pillar of the country's economy. The manufacturing share of GDP rose from 13 percent in the 1960s to 26 percent in the late 1980s and reached 35 percent in recent years. Transformation in Thailand was also a result of sustained and rapid economic growth. During the 38-year period between 1958 and 1996, the country never experienced negative growth in any single year, even in per capita terms. As shown in Table 2, Thai GDP grew at an annual rate of 7.6 percent for 36 years with extremely low growth volatility. Even in the worst year (1985), when the country was hit by serious external shocks, the country's GDP still grew at a respectable rate of 4.6 percent. In the 38 years before the Asian crisis of 1997/8, Thailand experienced only three years with growth rates below 5 percent, while for more than 20 of the remaining 33 years, growth rates were between 6 and 11 percent.

The rapid and sustained economic growth that characterized Thailand's transformation was closely paralleled by improvements in most other development indicators. The expansion of rural primary

[21] Sixty percent of farmers had less than 3 ha of land in 1993 (calculated from Table 5.20 in Dixon 1999: p185).

education led to Thailand being included among the countries with the highest adult literacy rates in South and Southeast Asia. The nationwide provision of electricity, housing, health facilities, piped water and sanitation, particularly in rural areas, greatly improved the living conditions of the Thai people. The incidence of poverty fell dramatically, and life expectancy at birth increased from 49 years in 1960 (a level similar to that in many African countries today) to 69 years in 1990. Similarly, infant mortality decreased from 90 per thousand live births in 1965 to 27 in 1990.

Thailand's success has attracted broad interest among development economists. Numerous journal articles and books have been written about Thailand's development experiences. We have greatly benefited from reviewing many of them, particularly the books written by Dixon (1999) and Muscat (1994), and a volume edited by Warr (1993).[22] Many of the arguments and analyses summarized below are either drawn directly from these sources, or have been informed by them.

Economic Transformation and Structural Change

The development of the Thai economy can be characterized as a combination of agricultural growth, import substitution industrialization (in the early 1960s) and export promotion in both agriculture and manufacturing throughout the process. The main role of the government in this transformation was the provision of infrastructure and the creation of a secure and attractive private investment climate. Conservative monetary and fiscal policies maintained economic stability and, with limited modifications, dominated Thai development policy from the 1960s through the 1980s. The development of a modern industrial and agricultural sector also benefited from relative political stability, which starkly contrasted with the political uncertainty that characterized Thailand from 1932 until 1957 (Dixon 1999).

Similar to many developing countries' governments, the Thai government pursued an import substitution industrialization (ISI) strategy during its early industrialization period of the 1960s. The policies enacted to implement this strategy resemble those found in other developing countries and include tax concessions, high tariffs to protect import-competing products, and low tariffs for intermediate and capital goods used in import-substitutable production.

However, unlike the ISI strategies of most other countries, Thailand did not focus on heavy industry, capital-intensive products, or direct public investment in manufacturing. Instead, the private sector played an important driving role in Thailand's industrialization. Consumer goods, including processed food and textiles, were the most important sectors in the early period of this process. Large public investments in infrastructure, particularly in transport and power generation, provided an economic base for growth acceleration in manufacturing, and the stable domestic political environment of the 1960s boosted the confidence of the private sector, encouraging investment. The private investment rate has always been high in the country, and it grew at around 20 – 30 percent annually in many years during the 1960s through the 1980s. There was a rapid expansion in the number of enterprises during this period, largely due to consistent government policies. For example, the government promised to refrain from nationalizing firms or establishing competing state-owned firms in sectors dominated by private firms. Moreover, the government also played a key role in facilitating industrialization by reducing transaction costs for private enterprises. For example, easing the process of hiring foreign staff and speeding up the administrative processes for the establishment of domestic and foreign firms can be seen as important interventions in Thailand that have to created incentives for commercial investments (Akrasanee 1973).

In 1960, the manufacturing sector accounted for 12.6 percent of GDP, a share similar to that in many African countries today. The production of consumer goods accounted for 77 percent of GDP, and food processing for more than 50 percent (also similar to that in many African countries today). By 1970, the manufacturing sector's share of GDP had risen to 17.1 percent. The share of consumer goods still

[22] While numerous studies have included quantitative measurements of Thailand's growth, particularly as part of the controversy over the broader East Asian experience (see, for example, Young 1994, Collins and Bosworth 1996, Klenow and Rodriguez-Clare 1997, Tinakorn and Sussangkarn 1998, Ratts and Stokke 2003, and Diao et al. 2005), we herein focus on more descriptive literature.

accounted for 61 percent, while food and related products comprised 37 percent of manufacturing GDP (Tambunlertchai 1993: p121).

The promotion of manufacturing under import substitution policies has often concentrated on domestic market-oriented sectors. However, in the case of Thailand, export-oriented manufacturing increased its market share as far back as the early 1960s, when the ISI strategy was still being implemented. Manufacturing exports were formally promoted starting in 1963. The policies to promote exports included the exemption of exporters from taxes on imported machinery, raw materials and other intermediate products, and a discount on interest rates for loans to exporters. As a consequence, the share of manufacturing in total exports rose rapidly from only 1 percent in 1960 to 5 percent in 1965 and 15.4 percent in 1970. While food processing and consumer good shares in manufacturing production declined over time, these sectors were the main drivers of export expansion. In 1970, processed foods accounted for 26 percent of manufacturing exports, textiles for 20.3 percent, and jewelry and precious stones for 17.1 percent.

The ISI strategy had a relatively short lifespan in Thailand. At the beginning of the 1970s, the emphasis of industrial development shifted to become more export-oriented, and the various industry-promoting policies increasingly focused on exports. However, as Muscat notes (1994: p216), policy and strategy adjustment tended to be extremely gradual in Thailand. Because of this, most measures caused only limited disruption and very few protests. Perhaps more importantly, this gradual approach reflects the cautious, light-handed and conservative approach to economic development and management that has generally characterized Thailand since the late 1950s. The coexistence of ISI and export promotion is just one example of this.

In the 1970s, especially in the second half of the decade, growth of manufacturing production and exports further accelerated. In 1980, the share of manufacturing in GDP rose to 22 percent, and that of manufacturing exports to 27 percent. The fact that the manufacturing sector's export share grew larger than its GDP share indicates the increasing export-orientation of the manufacturing sector during this period. While agro-processing and textiles continued to be the most important components of manufacturing, the higher value-added products, especially within agro-processing, started to replace simple processing activities, such as rice milling and cassava chipping. The export-oriented sector, particularly textile production, was the most rapidly growing manufacturing activity in the 1970s. Consequently, the share of textiles in manufacturing rose from 18 percent in 1970 to 24 percent in the early 1980s.

The labor-intensive textile sector and a variety of other sectors created employment opportunities, stimulating rural-to-urban migration. The manufacturing-based export boom also enhanced cross-sector linkages, such as the expansion of agriculture through increased intermediate demand, the promotion of tourism and the export of labor. In 1988, the earnings from tourism and workers' remittances were equivalent to 19 percent of the income from the export of goods and services. Rapid growth in manufactured exports drew attention from foreign investors in the 1980s, especially those from Japan and newly-industrialized Asian economies. The rapid expansion of foreign direct investment after 1986 further stimulated the growth and expansion of the labor-intensive manufacturing sectors in Thailand.

Linkage effects from increased income growth and consumer demand accelerated transformation. Sharply increasing per capita incomes in urban areas shifted demand to manufactured goods, services, and housing, which stimulated rapid growth in the financial services, property, construction, transport, retailing and telecommunication sectors. This growing demand further expanded domestic investment. For example, gross domestic investment as a percentage of GDP ranged between 22 and 26 percent throughout most of the 1980s, rose to more than 30 percent by the end of 1980s, and hit a peak of 40 percent in 1991 (Bank of Thailand, in Muscat 1994: p218).

Lessons from Thai Economic Transformation

Thailand's transformation took 30 years and resulted in significant structural change between and within agriculture and industry. This transformation was a relatively smooth process with stable long-term economic growth. It was led by agriculture in its early years, and was then carried by large private

investments that led to the expansion and growth of export-led manufacturing. This labor-intensive, low-technology manufacturing-led growth with strong linkages to agriculture and external markets has become characteristic of Thai industrialization. While the domestic market constituted the primary target of industrial development, export-oriented manufacturing, including textile fabrication and food processing, played a primary role throughout the transformation process.

The government supported economic development mainly through the provision of infrastructure and the creation of a secure and attractive environment for the private sector. Large public investments in infrastructure were particularly concentrated on transport and power generation, providing an economic base for accelerated growth. Government interventions have aimed at reducing transaction costs and improving institutional efficiency, which greatly augmented the private sector's incentive to establish and expand businesses.

The comparatively stable political and policy environment in Thailand over these 30 years can be regarded as one of the most attractive conditions for private businesses, and created long-term confidence in the country. The country's conservative monetary and fiscal policies further helped maintain economic stability. The sustained long-term growth in Thailand is also a consequence of non-disruptive policy adjustments throughout the transformation period. Thai policy adjustments can be regarded as extremely gradual (Muscat 1994), reflecting the cautious, light-handed and conservative attitude to economic development that generally characterized Thailand during these 30 years.

Agricultural Transformation

With its contribution of 40 – 50 percent to gross national product and the employment of more than 80 percent of the national labor force, the agricultural sector was the leading sector in the Thai economy during its crucial two decades of growth in 1960s and 1970s. While that role was taken over by manufacturing during the 1980s, the dynamics of agricultural development continued to significantly affect the industrialization process. Until 1975, agriculture accounted for more than 30 percent of GDP and employed more than 70 percent of the national labor force. As Siamwalla (1993) stressed, Thailand retains considerable comparative advantages in agricultural production and exports. While growth in the agricultural sector was increasingly overshadowed by the expansion of industry after late 1970s, by international standards, agricultural growth remained remarkably rapid in the same period. For example, between 1961 and 1976, the value-added of crops, a sub-sector accounting for 74 – 77 percent of agricultural GDP, grew at 4.8 percent annually, and the overall AgGDP grew at 5 percent over the same 16-year period.

The long-term agricultural growth in the 1960s and early 1970s was largely due to the existence of large areas of unused land suitable for cultivation, and their general ease of access. Both total farmland and the rice areas grew at an annual rate of 3.2 percent between 1961 and 1977, and 2.3 percent between 1977 and 1984 (Siamwalla 1987: p4). While surplus land had existed in Thailand for centuries, the government's investment in rural infrastructure, particularly in the establishment of rural road networks, made land expansion feasible beginning in the mid 1950s (Hirsch 1990: p49-50). Similar to other South and Southeast Asian governments, the Thai government invested heavily in infrastructure. Construction of highways and the rural road network made it profitable to bring new land into cultivation (Siamwalla 1987: p4. Another important factor supporting land expansion was public investment in irrigation.[23] Between 1950 and 1984, the Thai government invested a total of US$3.6 billion (at 1984 prices) in various irrigation schemes across the country (Siamwalla et al. 1993). The irrigated area more than doubled between 1954 and 1970, increasing from 0.93 million to 2.12 million hectares. By 1985, Thailand's total irrigated area amounted to 7.11 million hectares, which was almost seven-fold that seen 20 years earlier (see Table 5.15 in Dixon 1999). About 18 percent of the cultivated area in Thailand was irrigated by the 1990s; however, this was a relatively low share compared with that seen in other

[23] According to Siamwalla (1993), irrigation generally absorbed 60 percent of the Ministry of Agriculture and Cooperatives' budget up until the early 1980s.

Southeast Asian countries.[24] Thailand also gradually started agricultural intensification through the spread of improved varieties and increased use of fertilizer. Between 1960 and 1970, rice yields rose by 34 percent. While this yield growth was relatively slow compared to that seen in other Asian countries, it was still quite impressive given that a considerable amount of new land was brought into cultivation during this period.

Significant structural changes occurred in Thai agriculture after 1970, when the rapid economic transformation started to be led by the manufacturing sector. Beginning in the mid 1970s, the government substantially scaled up its general support to agriculture. This support went beyond investment in irrigation to include the financial sector. For example, the Bank for Agriculture and Agricultural Cooperatives (BAAC, a government agency) introduced a series of measures aimed at expanding the provision of rural credit. The Bank of Thailand provided backing credits for agricultural exports. Commercial banks were mandated to increase the proportion of their loans to the agricultural sector from 2 percent in 1974 to 13 percent in 1979 (Muscat 1994: p144). These measures, together with international aid received by BAAC, boosted the availability of cheap institutional credit for the agricultural sector. As a consequence, the share of formal sector loans provided to farm households increased from about 10 percent in the 1960s to almost 50 percent in the 1980s. It has been estimated that by 1990, institutional credit had reached almost 60 percent of agricultural households, compared to 15–20 percent in 1975. About 80 percent of this credit came from BAAC (Siamwalla 1990; Muscat 1994: p168).

The increased availability of credit, continued infrastructural and irrigation investments from the 1950s through the 1980s, and additional investments in rural electrification schemes to cover almost all villages during the 1980s and 1990s, were the major public contributions to promoting land improvement and the intensification and diversification of agricultural production. However, the rate of cultivated land expansion significantly slowed down in the mid 1970s.[25] Beginning in the early 1980s, continuous growth in crop production was mainly driven by increases in yield through intensification and diversification of crop production.

Unlike some other Southeast Asian countries, Thailand did not implement major government program in the 1970s and 1980s explicitly aimed at the widespread use of high-yielding varieties to substantially increase rice production. This can be mainly explained by the country's potential to continue expanding its cultivated area, which was sufficient to increase production and provide food for rising domestic demand and for exports of rice (Dixon 1999). Thus, in the 1970s and 1980s, when the average yields of most other Southeast Asian countries increased substantially, crop yields increases in Thailand were slower, resulting from a gradual intensification process. Indeed, Thai rice yields were stagnant in the 1970s. The use of modern inputs in agricultural production only picked up significantly from the mid 1970s onward. The application of fertilizer doubled between 1976 and 1985, and the use of other chemical inputs (e.g. herbicides and pesticides) increased more than five-fold. The most rapid increase in the use of modern inputs occurred in the 1980s. Between 1980 and 1990, the use of fertilizer and other chemical inputs increased 2.4- and 5.6-fold, respectively. Even with this rapid increase in fertilizer application, however, Thailand's rate of fertilizer use remained low compared with Asian standards. Moreover, the most substantial increase in fertilizer use occurred in the non-rice sector and was not generally aimed at yield enhancement. In many cases it was connected to the spread of contract farming, as the contractors frequently supplied a complete package (Trebuil 1993: p14). Within the rice sector, increased use of fertilizer was mainly due to the introduction of a second crop (Dixon 1999). Rice yields in Thailand finally reached more than 2 tons/ha in 1991, whereas many other Asian countries had already reached this level by the early 1970s.

In contrast, Thailand significantly outperformed other Asian countries in terms of agricultural mechanization (Siamwalla et al. 1993: p95). Obviously, the lending policies of BAAC greatly encouraged

[24] Irrigated areas accounted, for example, for 24.3, 28.6, 32.7 and 33.5 percent of total cultivated land in Indonesia, the Philippines, Malaysia, and Vietnam, respectively, in the similar time period.

[25] The annual rate of farm land growth fell to 1.2 – 1.3 percent after 1975, and growth in rice area was almost negligible during this period (Dixon 1999: p161).

the purchase of machinery, while increases in land holding sizes created incentives for farmers to invest in machinery. Mechanization became an important factor for both agricultural expansion and intensification. The tractorization of agriculture lifted constraints on the pace of cultivated area expansion and increased the extent of cultivation, particularly for upland crops. Similarly, the adoption of rice-tillers, threshing machines and water pumps promoted the development of double-cropped rice areas.

Diversification was also an important characteristic of agricultural transformation in Thailand. The diversification process occurred both in crop production and in the broader agricultural sector. Tables 7 and 8 are adopted from Dixon (1999) and present the structures of agricultural and crop production in Thailand in the 1980s.

Table 7. Structure of Thailand's agricultural GDP at constant 1972 prices (%)

	1961-66	1967-71	1972-76	1977-81	1982-86	1987-91
Crops	76.6	73.2	73.6	74.1	75.5	73.4
Livestock	12.0	11.5	11.6	13.6	14.5	17.5
Fishing	3.6	7.7	8.2	7.2	6.5	6.9
Forestry	7.8	7.6	6.6	5.1	3.5	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table 5.3 in Dixon (1999: p149).

Table 8. Average share of Thailand's crop GDP at constant 1972 prices

	1961-66	1967-71	1972-76	1977-81	1982-86	1987-91
Major crops						
Paddy rice	53.6	48.0	41.8	37.1	35.8	31.1
Cassava	2.8	3.4	5.3	8.6	8.0	8.0
Sugar	1.3	3.1	3.8	3.8	4.8	4.8
Maize	2.8	4.6	4.3	4.5	5.4	4.6
Rubber	4.5	5.1	5.6	5.9	6.5	9.8
Sub total	65.0	64.2	60.8	59.9	60.5	58.3
Other crops						
Vegetables	6.2	8.4	8.7	9.4	8.9	9.0
Fruits	12.2	11.6	12.7	13.8	15.3	17.0
Others	16.6	15.8	17.8	16.9	15.3	15.7
Sub total	35.0	35.8	39.2	40.1	39.5	41.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table 5.4 in Dixon (1999: p149).

Between 1962 and 1991, a consistent share of more than 70 percent of agricultural GDP stemmed from crop production. Among all crops, paddy rice was the most important crop, even as late as the 1990s. However, the share of rice in crop GDP decreased from 54 percent in the early 1960s to 31 percent in the late 1980s and early 1990s. The decline in the rice share was mainly caused by growth in cassava, rubber, vegetable and fruits, most of which were grown for export. While Thailand remained the world's top rice exporter in the 1980s, it also became one of the largest exporters of rubber, cassava and sugar, complemented by substantial growth in exports of fruits, vegetables and flowers. This strong agricultural export growth would have been impossible without large private investments from the processors and traders, including investment in new technologies (Siamwalla 1987: p35).

Agricultural diversification also occurred among the four agricultural sub-sectors in the same period. While the crop sector remained the dominant sector in agriculture, its share fell by 3 percent over 20 years. Livestock and fishing became increasingly more important, while forestry declined due to the expansion of cultivated land. Growth in livestock was driven by growth in poultry production beginning in the early 1980s; this growth was closely related to the rapid development of agri-businesses and various forms of contract farming (Volden 1995). The significant increase in domestic per capita consumption of chicken and the expansion of frozen chicken exports created huge market opportunities for poultry production. Between 1986 and 1993, chicken exports almost doubled, rising to 112,000 tons. The rapid development of marine aquaculture was made possible by public investments, the introduction of new techniques for shrimp farming, and extended access to new and more distant fishing grounds. Active promotion by the Department of Fisheries and the efforts of the private commercial sector contributed to the growth and diversification of fishery exports beginning in the late 1970s. In 1994, Thailand was the world's largest exporter of tinned tuna fish, providing 80 percent of world exports (Siamwalla 1993).

The diversification into high-value agricultural products for export or for middle-class urban markets in the Bangkok area was an important source of agricultural development during the transformation process. Diversification in agriculture also helped the rapid expansion of the agro-business sector. A relatively large proportion of the exports classified as manufactured came from the processing of agricultural products; these include tinned fruits, frozen chickens and frozen and tinned seafood.[26]

Lessons from Thailand's Agricultural Transformation

The agricultural sector was the leading sector in the Thai economy during its crucial two decades of growth during the 1960s and 1970s. This remarkable agricultural growth continued for quite a long period, until the early 1990s. Thailand's agricultural transformation was characterized by gradual intensification through mechanization and the adoption of new technologies and inputs. However, the country is not a typical example of Green Revolution-type agricultural development, in that the yields of food crops did not grow rapidly over a short period of time.

The transformation of agriculture (i.e. growth in land and labor productivity) was characterized by diversification of agricultural production in general and crop production in particular. Increased production and competitive pricing of high-value crops, livestock and fishery products made Thailand a strong and competitive player in world agricultural markets. Even with rapid increases in manufacturing exports, which dramatically decreased the share of agriculture in total exports, Thailand remained a substantial agricultural exporter and one of only a few net food exporters in Asia even during the 1990s.

Thailand never experienced any significant food security or self-sufficiency pressure, which explains why the role of the government was as active as it has been in other Asian countries seeking to promote high-yield technology in food crop production. However, the government's support was an important factor in agricultural transformation in Thailand. The government's support for technical change came primarily through public investment, particularly in irrigation, research (e.g. development of hybrid maize), credit provision, and extension services. While the level of government expenditure on agriculture, especially on agricultural research, was not comparable with those in other Asian countries (Siamwalla et al. 1993: p96), heavy investments in rural infrastructure, particularly in roads during the 1950s and 1960s, contributed significantly to agricultural growth by providing easy access of farmers to both land and markets.

The private sector, including farmers, agro-businesses and traders, played a leading role in agricultural transformation. Most agricultural commodities were handled by private traders, both in domestic markets and exports, and linkages between producers and markets were developed through a well-established merchant network. This network played an important role in stimulating agricultural innovation. Middlemen frequently acted as technical, commercial and financial advisers to farming

[26] Tinned produce and molasses, both classified as manufactured goods, contributed 14 percent of export earnings in 1988 and 9.2 percent in 1992 (Dixon 1999).

communities. Thus, it can be argued that the introduction of many new crops or new varieties, the promotion of high-value products, and the adoption of a wide range of modern inputs were all due to the responsiveness and entrepreneurship of Thai farmers, agro-businessmen and traders, rather than direct state interventions.

However, while there was no shortage of government programs directed towards the agricultural sector, it is believed that many of these government activities produced limited returns. The government was often seen as supporting pre-existing new technology, rather than encouraging de novo innovation. Examples of such emphasis on pre-existing improvements include the government support of agricultural diversification into livestock, upland crops, and fruit and vegetables, which were primarily the products of private sector activities. Policies to support new developments tended to follow and support existing initiatives rather than starting new ones. In many ways, this mirrors the Thai approach to development policy in general.

Economic Transformation in Mexico – From Rapid Growth to Crisis

Mexico transformed from a small, low-income country with a population of 26.5 million and a per capita income below 200 $US in 1950, to recently being cited as the 11th largest country in the world, both in terms of population and size of the economy (Solis 1981: p189; WDI 2008).[27] This rapid development makes Mexico the country with the highest per capita income among all middle-income countries selected and reviewed in Section 3.1. Mexico reached middle-income country (MIC) status by 1974, and per capita incomes have grown seven-fold since then, reaching $7,000 in 2005. In the following analytic narrative, we revisit this impressive growth story and show how the country's transformation process led to its current economic and income structures.

The transformation of the Mexican economy was characterized by a gradual shift from private sector-led agricultural and manufacturing growth towards the promotion of capital-intensive industrialization, with increasingly direct state intervention in the economy. This shift was driven by an urban and heavy industry-biased strategy and implemented through the promotion of selected industrial sectors that were picked as "winners." The government also increasingly restricted trade and FDI flows, and initially prudent fiscal management gradually faltered, leading to widening fiscal imbalances. Three broad phases can be distinguished in Mexico's transformation process. The first phase, from 1945 to 1965, was characterized by rapid growth and transformation in both the agricultural and non-agricultural sectors. Growth was generally led by the private sector and supported by complementary government policies and investments in infrastructure. In the second phase, between 1965 and 1981, agricultural growth slowed while rapid growth in industry was driven by government interventions such as direct state investments in selected industries. This phase was also characterized by rapidly increasing inequalities in both rural and urban areas, despite the implementation of a series of transfer schemes. Finally, the third phase was known as the "lost decade," due to a series of macroeconomic instabilities that caused a severe contraction of the Mexican economy. Mexico started to recover in the mid 1990s, but growth did not stabilize until recent years, and the economy still appears vulnerable to external shocks.

Several aspects of this experience make Mexico a relevant case study for Africa. Industrial planning during the early stages of transformation in Mexico, and the subsequent macroeconomic collapse, share similarities with the experience of many African countries during the 1960s and 1970s. Mexico's early Green Revolution-type agricultural success seems to have led to a more balanced growth path, raising the question of the causes and consequences of diverging from this path. Mexico's agro-ecological conditions, which include both tropical and arid climatic zones, are comparable to those found in many African countries, implying a broadly similar potential for agricultural production. Also, Mexico started its transformation process as an agricultural land-abundant country, and early agricultural growth was driven by land expansion, as is found in most African countries today.

[27] Mexico experienced a high population growth of 3.1–3.4 percent between 1950 and 1970. A major reason for this rapid growth was the history of promoting large families and prohibiting contraceptives. Beginning in 1973, the government legalized contraceptives and began to promote family planning activities (Solis 1981: p189; Perea in Randall 1996).

Mexico represents the case of a typical dual economy, both in terms of general development and agricultural transformation. However, while early industrialization in Mexico absorbed large amounts of surplus labor from rural areas, as predicted in Lewis' model (Lewis 1954), industrial growth and job creation failed to keep up with the rapid population growth seen after policies shifted towards capital-intensive industrialization. Agricultural growth decelerated and became stagnant in the middle of the transformation process, making agricultural transformation an unfinished business and leaving many small farmers marginalized. As a conclusion of the review of Mexico's transformation experience, we argue that the early shift away from agriculture towards state-led capital-intensive industrialization resulted in many structural and social development challenges. Many of these issues remain unresolved today and are likely to continue to shape Mexico's future development path. The following review mainly draws on and interprets the works of Venezian and Gamble (1969), Solis (1971 and 1981), Scott (1982), Aspe (1993), Dornbusch and Edwards (1995), and Randall (1996).

Economic Transformation: Rapid Growth and Income Divergence

The foundation of Mexico's post-WWII growth acceleration was laid in the 1930s, when the country entered a time of relative political stability.[28] Public investments in transportation and irrigation opened up new agricultural land for cultivation and created market access for agricultural and non-agricultural entrepreneurs. Foreign direct investments in mining and the associated construction of a railway network created new trade opportunities with the world, and especially with the US World War II (and later the Korean War) provided Mexico with opportunities to develop a manufacturing sector. Increased international demand and reduced import competition for Mexican goods, particularly consumer goods, also contributed to the expansion of manufacturing. While economic growth remained modest during the abovementioned wars, the creation of infrastructural and institutional foundations, as well as the development of a manufacturing base, facilitated growth acceleration from the mid 1940s onward. Geographic proximity to the US also aided Mexico in the transformation process. In addition to constituting a large and growing export market for Mexican goods (e.g. 85 percent of Mexican exports in the 1950s were destined for the US market; Venezian and Gamble 1969: p37), the US was also the major source of FDI flow to Mexico (e.g. 79 percent of FDI in 1970 came from the US; Kate and Wallace 1970: p195).[29]

Rapid and export-oriented growth, especially in the agricultural sector, characterized the early post-WWII transformation until 1956. Macroeconomic stability was achieved in the early 1950s and constituted one of the important conditions for sustained growth. During this period, inflation rates decreased and were maintained at low levels, the government budget became more balanced, and the exchange rate was stabilized by the adoption of a fixed currency regime that pegged the peso to the US dollar.[30] Under these macroeconomic conditions, GDP grew at an average annual rate of 6.2 percent between 1950 and 1967 (Venezian and Gamble 1969: p20). With a growth rate higher than total GDP growth (7.5 percent per annum; Solis 1981: p4), the agricultural sector contributed significantly to economy-wide growth, although the size of this sector was relatively small (22.5 percent of GDP in 1950,

[28] Similar to other Latin American countries, Mexico was an agricultural and mining-based country under colonial rule until around 1876. Thereafter, policy reforms, infrastructure development, and selected tariff protection measures helped create a small manufacturing sector, producing items such as clothing, cotton and wool fabrics, metal goods, ceramics, sugar, and tobacco products. Increasing international demand for agricultural commodities such as cattle, leather, cotton, sugar and mining products led to a period of modest GDP growth of 1.6 percent per capita between 1876 and 1910 (Venezian and Gamble 1969: p12). Rising inequalities led to revolution in 1910, and the onset of the world crisis in 1929 largely delayed Mexico's further development until 1934.

[29] At the time when agricultural exports decelerated and industrial development increasingly focused on domestic markets, foreign exchange inflows from the US, including increasing tourism receipts and remittances from Mexican migrant laborers, became increasingly important items of balance in the current account.

[30] Mexico adopted a system of fixed exchange rate and a public spending regime with the major intention of keeping inflation low.

Venezian and Gamble 1969: p218) compared with those in many other developing countries at their early stages of transformation. Growth in both agriculture and non-agriculture during this period was led by the private sector and encouraged by public investments and supportive policies. Growing domestic demand driven by a very high population growth rate and increasing international demand also added to early growth acceleration. The development of infrastructure (especially roads, electricity and irrigation), and the provision of financial services supported the development of markets and improved the conditions under which the private sector did business. In addition to public investments, the state also implemented a set of policies to encourage private investments; these included low corporate taxes, tax benefits for reinvested profits, and special benefits for foreign investors.[31] Furthermore, special benefits for investments in previously nonexistent business sectors fostered diversification and complemented the other investor-friendly policies.[32]

The private sector traditionally dominated the Mexican economy. Producers responded positively to policy incentives during the early transformation process, rapidly increasing their investments and production.[33] The share of investment in GDP increased from 12.8 percent in 1950 to 19.7 percent in 1970 and to 22.4 percent in 1975, with the majority of investments stemming from the private sector during the early period (Solis 1981: p132). This capital accumulation, the adoption of modern technology, and improvements in management all meant that labor productivity in the industrial sector increased substantially by about 70 percent per worker between 1950 and 1965.

While the Mexican government started to implement an import substitution industrialization (ISI) strategy as early as the 1940s, the initial interventions were less distorting and more modest compared to the ISI policies of other Latin American countries (Kate and Wallace 1980). The "First Law of Manufacturing Industries," which was passed in the early 1940s, included a set of subventions, trade protection measures, and energy sector regulations to subsidize local industries. The theoretical justification for ISI was formalized in the Prebisch-Singer dependency theory (1950, which argues that poor countries might never catch up with developed countries due to the implicitly worsening terms of trade between the goods produced by the two groups. The implementation of ISI in Mexico is also explained by the increasing nationalism and popular support of industrial self-sufficiency, and by the influence of lobby groups benefiting from protection (Solis 1971, Hoshino 2001).

The ISI strategy placed an increasing emphasis on intermediate and capital goods, leading to significant internal structural changes within industry. Consumer goods such as food, beverages, tobacco, textiles, clothing, and leather products continued to grow at a healthy rate of 5.6 percent between 1950 and 1965. However, growth in non-consumer goods, including chemicals and engineering products, accelerated to 11.1 percent, while the share of consumer goods in the manufacturing sector fell from 72.2 percent in 1950 to 43.3 in 1965 (Solis 1971: p6).[34] This structural shift within manufacturing had significant economy-wide consequences. It ended a period of relatively balanced growth, in which labor-intensive manufacturing growth created jobs and thereby absorbed the growing population coming from rural areas. Moreover, the early growth in manufacturing was driven by the country's comparative advantage at that time, and hence had strong linkage effects with the agricultural sector. With the shift towards more capital-intensive manufacturing in the subsequent period, the economy started to become more inward-looking and subsequently lost its comparative advantage in the exports of many competitive manufacturing goods.

The ISI strategy became increasingly protectionist in the mid 1960s, consistent with the structural changes within manufacturing. The establishment of the National Tariff Commission in 1966

[31] See Kate and Wallace (1980) and Aspe (1993) for a detailed description of the policies and measures.

[32] See Venezian and Gamble (1969) and Solis (1970) for a detailed discussion of the policies.

[33] Private businesses accounted for 85.4 percent of GDP and 83.4 percent of employment in 1980, despite the nationalization period of the 1970s (World Bank 1994:52). However, some sectors had monopolistic powers dominated by private businesses. Also see Hoshino (2001) for a historical account of Mexico's industrialization and the role of the private sector.

[34] For a detailed account of structural output and employment shift also see Scott (1996: p85)

institutionalized protected trade policies, and the license system was broadly expanded into many protected industrial sectors (Kate and Wallace 1980). These protectionist policies created a large number of inefficient enterprises with monopolistic powers in heavy industry, and trade barriers further discouraged export-oriented growth and diversification. Consequently, the ISI policies that had been partly motivated by balance of payment considerations ended up actually widening the trade deficit and increasing macroeconomic instability. In response to this looming crisis, instead of enacting market-oriented economic reforms, the Mexican government reinforced its import substitution policies and direct involvement in the economy. The concentration of economic power created special interest groups; private monopolistic and parastatal elites were fiercely opposed to increasing competition, instead favoring the extension of their power through public interventions. Political pressure also came from worker's unions calling for job protection for unionized workers. This limited opportunities for the rural population, which was growing rapidly. At this critical moment of development, Mexico chose a path of more direct state involvement, especially in the development of heavy industries. Public investment shifted away from infrastructure, due to the huge fiscal burden of nationalizing private enterprises into so-called strategic sectors (e.g. steel and fertilizer production). This new policy direction increased the number of parastatals from below 300 in the 1960s to 1,155 in 1983 (Randall 1996: p19).[35]

The ISI policies also distorted the private sector's incentives to invest in sectors that were not under government protection. More and more private firms shifted their operations to capital-intensive sectors such as chemicals, vehicles and electric equipment, leading to disproportionately high demands for financial capital and new knowledge, which could not be met by domestic sources. Despite the increasingly strict rules on FDI and ownership of foreign firms, a rapid increase in foreign capital inflow and the creation of joint ventures filled these gaps and supported the new industrialization path.[36] Mexico became one of the largest FDI recipients in the world, receiving a total of 27 billion $US (in 1985 constant prices) between 1955 and 1982 (Nunez 1990: p20).

While this focus on capital-intensive industries continued to support rapid growth, particularly in the industrial sector, a series of accumulating problems eventually led to the 1982 crisis. The need for more capital combined with a widening trade deficit largely increased the indebtedness of many companies, and led to a deterioration of the current account balance. The government's financial situation worsened due to investments in parastatals, which further diverted public resources away from potentially more efficient uses. Revenues were insufficient to finance the investments and social spending, further widening the fiscal deficit.[37] The shift away from labor-intensive manufacturing and consumer good production weakened the domestic linkages, especially with agriculture and related services. It also slowed the rate at which new jobs were created, which together with rapid population growth further increased unemployment in both urban and rural areas, widening the income gaps and increasing social tensions (Dornbusch and Edwards 1995).

In an attempt to address these rising inequalities and social tensions, the government introduced a number of measures, including a new focus on agriculture and rural development (discussed later in this section). New subsidies and transfers were made possible by oil revenues. The discovery of new oil fields combined with the world oil price boom in the 1970s temporarily made Mexico a large oil exporter. Between 1982 and 1985 oil revenues contributed one third of central government revenues (Everhard and Duval-Hernandez 2001: p2). While the increase in social spending helped contain some of the social tensions, it also concealed the mounting problems generated by production inefficiencies in the state-owned and protected industries, as well as the implementation inefficiencies of various social programs. As a consequence, inequality and poverty continued to rise (Randall 1996), even though public spending

[35] This trend was reversed during structural adjustment, with the number of parastatals dropping to only about 200 in 1994.

[36] The development of maquilas (tax-exempt assembly industries) was an exception to the general trend towards more state involvement and restriction on FDI. The maquila sector became important in the Mexican economy and accounted for about a quarter of all exports in 1991 (World Bank 1994).

[37] See Reynolds (1978) for analysis.

rose from 20.5 to 30 percent of GDP between 1971 and 1976 through social transfers, increased energy subsidies, and support to parastatal enterprises (Gavin 1996: p2).

The economic bust became inevitable once international oil prices fell sharply. The country experienced a painful adjustment period known as the "lost decade," which started in the 1980s and lasted until the early 1990s. The peso was sharply devalued by 260 percent (Randall 1996: p23), resulting in rising import prices and high inflation. This, together with a vicious circle of capital flight, skyrocketing external debts, deterioration of the exchange rate, and the collapse of government finances, culminated in a dramatic growth collapse. GDP contracted by 8.1 percent in 1982 and 9.1 percent in 1983. This traumatic growth shock, together with the successful experience of many Asian countries observed over the same period, strengthened the belief among many Mexican policy makers that radical change was necessary. Thereafter, the country entered a period of economic reforms and structural adjustments, including comprehensive trade reforms, liberalization of domestic markets, removal of capital controls, and general reductions of regulations.

Agricultural Transformation: From Early Success to Crisis

Mexico is one of the few countries in the world that showed rapid agricultural growth right after WWII. Agriculture grew faster than total GDP during the first post-war decade, at 7.5 percent per annum, and 4.6 percent between 1950 and 1965 (Solis 1971: p4). Agricultural exports grew at an average annual rate of 6.3 percent during the same period, and livestock exports increased 20-fold (Venezian and Gamble 1969: p89). This rapid growth in both output and exports, which indicates the important role of agriculture during the early period of Mexico's transformation, made the country largely food self-sufficient, fostered inter-sectoral linkages by providing inputs to the manufacturing sector, and earned enough foreign exchange earnings to support ISI policies. However, between 1965 and 1970, annual agricultural growth sharply declined to 1.2 percent, which was below even population growth levels. Agricultural growth failed to fully recover thereafter, and remained volatile despite the government interventions aimed at reviving growth in the 1970s. The following sections seek to explore both the sources of Mexico's early agricultural success, and the causes of the sector's subsequent crisis.

Early agricultural success can be attributed to impetus from the land reforms that started in the 1940s, as well as complementary public investments in infrastructure and agricultural research.[38] Mexico's initial agrarian structure was characterized by the coexistence of a few large estates descending from colonial times, along with a majority of smallholders; this situation is comparable to current conditions in Kenya, India and the Philippines (Binswanger and Deininger 1997). While land reform continuously redistributed land to Mexican smallholders, the dual agricultural structure has persisted through to present day (see the following sections for more detail). Beginning in the late 1930s, the extension of the transportation and irrigation networks, combined with the redistribution of land, allowed farmers to expand their activities to previously unused land. Land use area expanded by 2.9 percent annually between 1941 and 1951. Farmers used this opportunity to rapidly respond to rising national and international demand for food and agricultural commodities. While domestic demand was driven by increasing urban incomes and population growth, Mexico also developed a comparative advantage in several export goods, including cotton, sugar, coffee, melons, strawberries and cattle, which contributed up to 80 percent of the country's agricultural exports in the 1940s (Venezian and Gamble 1969: p91).

With the slowdown in land expansion after 1951, productivity increases became the major driver of output growth, especially for cotton and wheat production.[39] In fact, Mexico experienced a Green Revolution-type agricultural transformation even before the onset of the Asian Green Revolution. The Mexican government actively supported the development and use of modern technologies (seeds), the

[38] Venezian and Gamble (1969) argue that political rather than economical considerations led to these early investments.

[39] Estimates suggest that productivity improvements accounted for about one quarter of the increases in corn and beans and for most of the increases in wheat and cotton production (Venezian and Gamble, 1969). Yields for cotton grew by 123 percent and those for wheat by 152 percent between 1950 and 1966. Over the same period, yields of corn and beans increased by 53 percent and 58 percent, respectively (Venezian and Gamble 1969: p75).

promotion of modern inputs (especially fertilizer), and the mechanization of production. Public research institutes were the major players in the development of new agricultural food crop technologies, providing major high-yield varieties for food crops. The establishment of Productora Nacional de Semillas (PNS), a public seed company, played a key role in the production and distribution of the food crop seed varieties, especially for wheat and corn. As a result, the new seed varieties accounted for almost 100 percent of wheat and 5-10 percent of corn production by 1960 (Venezian and Gamble 1969: p105). On the other hand, the private sector led technology development for industrial crops such as cotton and sugar cane.

The adoption of modern inputs and the mechanization of production were also made possible by increasing farmers' access to financial services. The government supported agricultural credit through three major state banks. In addition to these agricultural banks, the Guarantee and Development Fund for Agriculture, directed by the Central Bank, encouraged private sector banks to provide credit to farmers. In 1965, the credit volume from these private banks surpassed the credit provided by government banks, and total private investment increased three-fold during 1950-1965. Largely as a result of this, the share of land with fertilizer use increased from 5 percent to 15 percent between 1950 and 1960. Mechanization also grew rapidly during this period and thereafter (Venezian and Gamble 1969: p102). For example, the number of tractors per 100 hectares reached 25 by 1961 and further increased to 33 in 1970. These private investments were complemented by public investments in irrigation. Although irrigation investments slowed after 1950s, the 12.6 percent of cultivated land under irrigation in 1961 increased to 14.0 percent by 1970.

However, this sector-wide perspective hides the unevenness of agricultural development within Mexico, which partly explains the stagnation of agriculture after 1965. Mexico's land reform was the most ambitious in Latin America, and two thirds of the crop land was redistributed to the reform sector (*ejido*) between 1917 and 1988.[40] By 1950, about 44 percent of the land had been expropriated from plantations and redistributed to *ejidos*; the remaining land was farmed by private farmers not included in the *ejido* system (i.e. private subsistence farms and larger commercial farmers). However, the majority of small farmers, particular those within *ejidos*, were largely unaffected by transformation; instead, the large commercial farmers were the major beneficiaries of government investments and policies. These farmers produced 94 percent of the agricultural output in 1950; their share in total agriculture continued to increase thereafter, reaching 98 percent in 1980 (Yanagihara and Hisamatsu 1997: p9). Slightly more than three percent of farms accounted for 80 percent of output growth between 1950 and 1960 (Scott 1982: p79). On the other hand, it is estimated that in 1970, 53 percent of farmers were subsistence small farmers with land holdings of less than 2 hectares, another 40 percent of smallholders produced cash crops with traditional technology, and the remaining 7 percent were commercial farmers who mostly farmed irrigated areas and used modern technology (Scott 1982: p79).

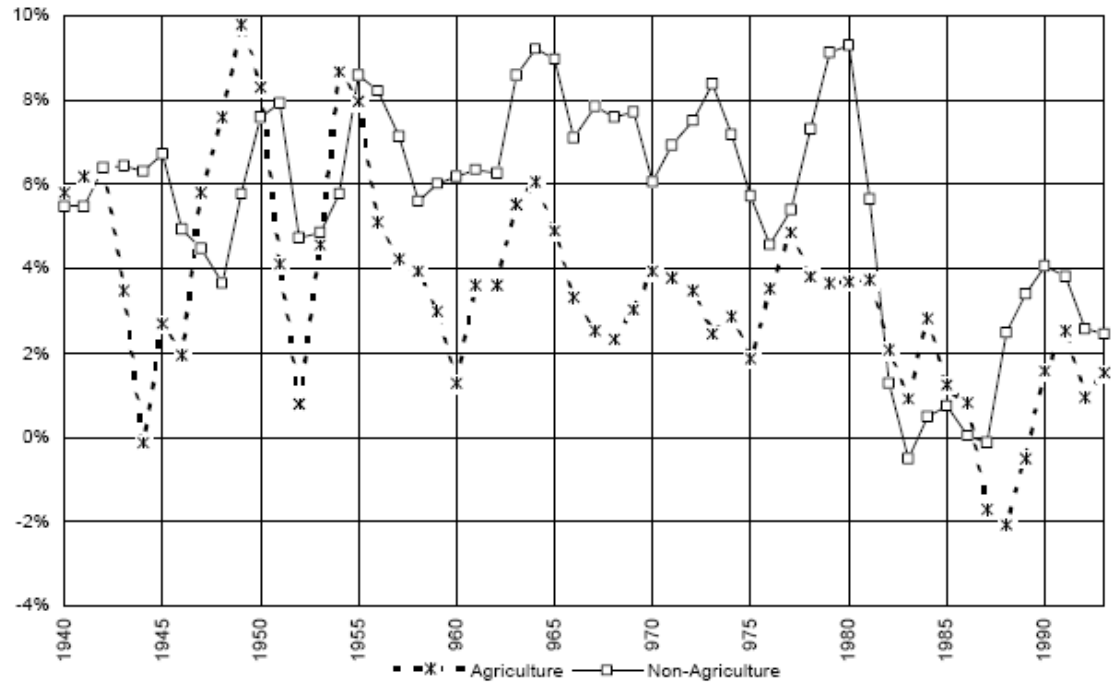
Most of the government-sponsored support for agriculture disfavored the smallholders. Rainfed agriculture, which occupied the majority of arable land and was smallholder-dominant, received only about 10 percent of public agricultural expenditures until the 1970s (Yanagihara and Hisamatsu 1997: p9). Smallholders also had less access to credit. For example, in the 1940s and 1950s, the *ejido* sector received only 20 percent of total agricultural credit, even though these farmers occupied 44 percent of arable land. During the same time, fertilizer application among *ejidos* was only half the level of that seen on other private farms (Heath 1992: p701). There was also a strong regional dimension of uneven agricultural development in Mexico. Annual average growth rates differed significantly across regions in Mexico. For example, while agricultural growth between 1950 and 1962 was 7.9 in the North Pacific and 4.5 percent in the South Pacific, it was only 2.7 and 2.4 percent, respectively, in the North and Central regions during the same time. Differences in the quantity and quality of land, the share of irrigated land,

[40] *Ejidos* are communal lands on which households are each allocated their own tract of land to work, the income from which accrues to the household rather than the community (Heath 1992: p696). In 1981, the average parcel size of an *ejido* was around 7 hectares, and the share of irrigated land was about 18 percent, similar to the values seen in the private sector (Heath 1992: p703).

the speed of technology adoption and diversification towards high-value crops, and hence, in the rate of commercialization and capitalization, are the main factors explaining this widening regional growth gap.

The most important factor explaining the stagnation of agricultural sector growth as a whole from 1965 onward was the unfavorable domestic terms of agricultural trade, which suffered from import substitution policies, the fixed exchange rate regime, and domestic price distortions. In addition, the government shifted public investment to other sectors, meaning that the share of agriculture in government spending declined from 20 percent to 10 percent during the 1950s through 1960s. While this declining share of public investment in agriculture can be partly explained by the declining relative importance of agriculture in the economy, the neglect of agricultural financial services and the slowdown of irrigation expansion are regarded as major shortcomings in agricultural policies (Venezian and Gamble 1969, Heath 1992). As a result of these urban and industry-biased policies, agricultural growth decelerated, even dipping below the population growth levels for several years (Figure 1).

Figure 1. Agricultural and non-agricultural growth in Mexico



Source: Banco de México, Indicadores Económicos, various issues.

In an attempt to bridge the increased rural-urban income divide and reduce poverty during the 1970s, the government directed additional resources to agriculture, mainly to smallholders and the rural poor. Public expenditures towards agriculture doubled from 7 percent of total public expenditure in 1970/71 to 15 percent in 1974/75 (Yanagihara and Hisamatsu 1997: p10). However, the measures focused more on state-directed redistribution rather than growth, which proved to be fiscally untenable once the oil windfall dwindled.

By the early 1980s, the government was playing an important role in the entire food supply chain, including provision of financial and technical assistance, marketing, input subsidies, and agricultural processing. Public enterprises supplied inputs and seeds. The Compania Nacional de Subsistencias

Populares (Conasupo) administered food prices with the objective of keeping consumer prices low and producer prices high. This food subsidy scheme became more and more important and the total price subsidy reached 1 percent of GDP by the end of the 1970s (Yanagihara and Hisamatsu 1997: p8). In addition, subsidies for agricultural inputs, including fertilizer, water, credit, crop insurance, and fuel, amounted to 5 percent of agricultural output, while subsidies on official rural credits ranged between 40 and 60 percent of the loan values (Yanagihara and Hisamatsu 1997: p8). Obviously, due to their more intensive use of inputs and higher share of marketed output, large commercial farmers were the major beneficiaries from these subsidies. This subsidy system also proved to be fiscally untenable, and collapsed after 1982.

After the 1982 crisis, Mexico embarked on a series of agricultural policy reforms with the objective of creating a market-based agricultural economy. From 1985 onward, the government reduced input subsidies and import protection, and commenced the liberalization of domestic prices and markets. The Northern American Free Trade Agreement (NAFTA), starting in 1994, exposed Mexican agriculture to international competition. Export-oriented farmers adapted successfully to the new situation. Agricultural exports to the US grew by 70 percent during the first five years of NAFTA (Giugale et al. 2001: p80). At the same time, imports of agricultural goods from the US increased by 60 percent, accelerating competition in the domestic market. During the same period, despite complementary government support programs and continuous land reform in the *ejido* sector,[41] poverty among small farmers increased, especially among indigenous populations. The persistence of the poverty trap was also reflected in the fact that agricultural employment remained at high levels of around 20 percent, while the share of agriculture in total GDP declined from 8 percent in 1995 to 4 percent in 1999 (Giugale et al. 2001: p80). Limited opportunities for migrants, high marketing costs for agricultural produce, and small farm sizes (which disfavored investment) are among the main challenges making it difficult to break the rural poverty trap in Mexico.

Lessons from Mexico's Transformation Process

First, political stability, macroeconomic stability, and favorable external conditions were important preconditions for initializing the transformation process. The emergence and rapid growth of supply-responsive agricultural and manufacturing sectors was initially supported by infrastructure investments (roads, irrigation) and the impetus from land reform. The early development of the manufacturing sector in Mexico was also supported by the international and domestic demands induced by both WWII and the Korean War, which created an important basis for rapid transformation during the post-war period.

Second, the private sector led transformation throughout the entire period. However, during the heights of nationalization, many protected industrial sectors, though in private hands, became increasingly concentrated into monopolistic market powers. In the successful early transformation phase, the government played an important role by ensuring a stable and consistent macroeconomic and policy environment and providing infrastructure. Thereafter, however, the government increasingly shifted towards an inward-looking strategy that comprised increasingly direct interventions in economic activities. This protectionist and heavily industry-biased industrialization created inefficient and less competitive industries. The policies were also biased against agriculture, leading to rapidly growing income disparities.

Third, Mexico's experience underlines the importance of agricultural transformation. Agriculture grew more rapidly than total GDP during the first phase of transformation and contributed significantly to broad income growth and the development of inter-sector linkages. While early agricultural growth was primarily driven by land expansion, the Green Revolution-type public investments in agricultural research supported the continuation of agricultural growth through productivity increase. Investments in irrigation, the development of seed production and distribution systems, and the provision of fertilizer and credit to farmers contributed to sustainable agricultural growth. However, agricultural transformation was

[41] The major elements of the land reform included the assignment of land titles and the legalization of land transactions (Venezian and Gamble 1969).

negatively affected by an early shift of the government's attention away from this sector. This shift left a majority of small farmers, particular those within the *ejido* sector, marginalized in the transformation process, resulting in a dual agricultural structure within the economy. This dual agricultural structure has created a persisting poverty trap in rural areas and among small farmers. Moreover, the agricultural sector as a whole stagnated due to deterioration of the domestic terms of trade for agriculture. This deterioration was mainly due to import substitution policies, the overvalued exchange rate, and domestic price distortions, in combination with reduced public investment in rural areas and agriculture. This agricultural stagnation hampered economy-wide growth and contributed to increasing macroeconomic imbalances and worsening income distributions. While the market-oriented domestic reforms and NAFTA in the 1990s generally improved the efficiency and competitiveness of Mexican agriculture, the dual structure of agriculture was reinforced during this period and still persists today.

Finally, ISI policies created a capital-intensive manufacturing sector, shaping the country's manufacturing structure in particular and the industrial sector in general. The creation of this industrial structure came at the cost of many other aspects of development. In addition to its negative effect on agricultural transformation (discussed above), the early shift away from the country's traditional labor-intensive manufacturing, which has strong linkages to agriculture and a comparative advantage in exports, caused serious long-term impacts. This policy shift contributed to the increase in unemployment, the rise in income disparities, and the worsening macroeconomic stability, which made the economy extremely vulnerable to external shocks. Since the policy shift was financially supported by windfalls from the oil booms in the 1970s and early 1980s, it further delayed the necessary structural reforms of the Mexican economy. Increased inequality and unstable economic growth are development challenges that have persisted through to the present, even though Mexico has reached the status of an upper-middle-income country.

Summary of this Section

In this section, we reviewed the economic transformation processes of 17 selected developing countries that became middle income countries during the past four decades. The overview in Section 3.1 uses a rather simple comparative approach and does not delve into quantitative cross-country analysis. However, the results of Section 3.1, together with the findings from the two country case studies in Sections 3.2 and 3.3, support the main theorems of economic transformation. Transformation and rapid economic growth have gone hand-in-hand, and the major indicators used to measure the transformation process are consistent with development economics theory. On the other hand, both the overview and the two country case studies show that transformation is a much more complex process than suggested by stylized facts and predicted in the theory.

The economic transformation in Thailand was a relatively smooth process, whereas that in Mexico was a rather uneven and even unfinished process. The contrasts in both agricultural transformation and industrialization between the two countries are staggering. While a modern agricultural sector was established in Mexico in the 1950s and 1960s, this transformation largely bypassed many small farmers, who remain trapped in the traditional, subsistence-type production system. The dual agricultural structure and rural poverty traps have remained despite the move towards free market policies beginning in the 1990s (including NAFTA in 1994) and a series of supportive agricultural policies. In contrast, the broad-based smallholder agricultural growth in Thailand combined with the gradual development of a labor-intensive, export-oriented manufacturing sector led to consistently high economy-wide growth and relatively smooth transformation in both agriculture and the economy.

Our results also show that transformation requires a much longer time period in many countries, including in the two case-study countries, than estimated in the early development economics theory. The analysis also confirms that structural change does characterize the transformation process, but many developing countries might have been too keen to accelerate industrialization through strong government interventions. In Mexico, for example, the sectoral attention of supportive government policies, including public investments, has been switched away from agriculture early, before a solid foundation of

agricultural transformation has integrated a majority of the small farmers. Such a strategy does not stimulate, but rather slows down the transformation process. It is also important to note that transformation is an ongoing process in developing countries, and it is far from completed when a country passes the $1,000 per capita income threshold.

Transformation constitutes an important component of development that goes beyond rising per capita incomes and structural changes in the economy. Significant increases in inequality have become increasingly important issues in the transformation process, even in countries classified as success stories such as Thailand and China. Led by Amartya Sen, our understanding of development has broadened from a narrow focus on incomes to the more multidimensional approach of considering well-being (Sen 1998). Linking the poor to transformation through investments that enable them to participate in the process will be critical for successful development (Timmer 2008). Although we do not provide an overview from this broader development perspective herein, many of the countries reviewed in this paper have paid special attention to uneven development, particularly after their rapid growth periods. Some of the governments have implemented policies aimed at dealing with poverty and inequality. However, while most development economists agree that a certain degree of rising inequality during transformation is unavoidable, the trade-offs and long-term costs are not well understood. Our knowledge of the economic dynamics of low-income countries has advanced substantially in recent decades (Schultz, 1980, 1990), but further study will be required before we fully understand shared growth and its relationship with transformation.

4. WHAT ARE THE KEY MESSAGES FOR AFRICA?

In this paper, we have revisited the development economics literature and provided extensive empirical evidence on successful countries' transformation processes. We find that many African countries in the process of starting their transformation today are at income levels similar to those of the studied Asian and Latin American countries early in their transformation processes. Thirty-five out of 48 Sub-Saharan African countries were classified as low-income, with per capita incomes below $900 in 2005. Among the 25 poorest countries in the world, with per capita incomes below $400 in 2005, 22 were in Sub-Saharan Africa. Motivated by the recent growth acceleration in Africa, we examined the messages that the development economics theory and practice of the last four decades can provide for low-income African countries today.[42] Six major messages emerge from this analysis:

First, the stylized facts characterizing the process of economic transformation remain meaningful indicators for measuring successful transformation. The sources of transformation summarized in Section 2 are still the key for this success. Transformation is accompanied by rapid economic growth, which generally raises the income levels of the poorest population groups. However, the persistence of poverty and increasing income inequality exposes the limitations of welfare measures based solely on per capita income. Rapidly rising inequalities call for a broader definition of the transformation process and the incorporation of wider-ranging goals for development. However, income divergence was pronounced during the growth collapses or slowdowns in many Latin American and African countries, indicating the importance of constant and sustained growth.

With this new understanding of transformation, the second important message is that the role of agriculture for transformation seems to be even more important today than it was four decades ago. While Schultz and other agricultural and general economists have recognized the important contribution of agricultural transformation in the development process, today we see that this contribution is also perfectly consistent with the role of agriculture in shared growth and the reduction of poverty and inequality. Thailand's experience of successful agricultural transformation and lessons drawn from Mexico's experience during its early transformation period suggest that switching the sectoral attention away from agriculture before establishing a solid foundation for the transformation of smallholder agriculture will slow down transformation rather than stimulating it. Bypassing small farmers during the process of agricultural modernization (such as seen in Mexico) marginalizes a large group of the rural population and is likely to lead to social tensions. It also complicates long-term poverty reduction and improvements in income inequality, even after the country as a whole reaches middle-income status.

The third message is that productivity growth led by the adoption of modern technology is key for agricultural transformation. Smallholder farmers are entrepreneurs and have become vanguards in the adoption of new technologies and in raising agricultural productivity during the Green Revolutions in many Asian countries. However, smallholders face many external constraints that cannot be overcome by their own strengths, and therefore need supportive government policies and public investments. The most important policy action must be the removal of urban- and industry-biased policies in trade, marketing, taxes, and other macroeconomic aspects. The most important public investment must be in rural infrastructure, including irrigation, and the provision of agricultural research and extension to a majority of farmers.

These arguments are not new, and were first proposed by development economists in the 1960s and 1970s. The necessity of these policies and public investments in transformation has also been proved by the successful experiences of many developing countries over the past four decades, including the two countries reviewed in this paper. However, these arguments remain highly relevant for many African countries today. Sub Saharan Africa has fewer and less-developed roads than Asia had at the time of its Green Revolution (Johnson et al. 2003). African farmers must sell about twice as much grain as

[42] Among the 35 low-income Sub-Saharan African countries, 10 are classified as mineral resource-rich, and the remaining 25 are agriculture-based economies. Since mineral-rich countries may have alternative avenues for becoming MICs, the key messages emerging from this study are mainly aimed at agriculture-based low-income countries.

comparable Asian and Latin American farmers to purchase a kilogram of fertilizer, due to poorly-developed markets and infrastructure, resulting in high input prices (Morris et al. 2007). Only about 4 percent of food crops in Africa are irrigated, and irrigation investments represent only a fraction of comparable investments seen in Asia, where about one-third of the crops are under irrigation. Africa's diverse agro-ecological conditions and highly heterogeneous production systems will require the development of many more new, African-specific improved crop varieties than were required for the Green Revolution in Asia. Despite this, government spending by African countries on agricultural R&D and the adaptation of technologies has been stagnant since the 1990s, at a level that is much lower than that in Asian countries, both currently and historically. Thus, Schultz's famous statement remains highly relevant for today's Africa: transformation is dependent upon investment in agriculture, and this investment will pay off if "the man who farms has the opportunity and incentive to transform the traditional agriculture of his forebears" (Schultz 1964: p23).

The fourth message is that while manufacturing has been regarded as the main driver of transformation both in early development theory and in practice, growth in manufacturing and services must be led by the private sector and supported by government policies and public investments. Improving the physical and institutional environment is critical to providing incentives for the private sector to do business and create competition. Winner-picking industrialization strategies and related policies may help create a large industrial sector, but this sector often fails to establish close links with the rest of the economy. Moreover, the creation of this sector comes at high direct and indirect costs, especially with regard to agricultural transformation. Increased inequality and difficulties in making these "picked" industrial sectors internationally competitive and capable of generating sustainable long-term economic growth all constitute painful lessons learned from this type of transformation strategy.

On the other hand and as the fifth message, private sector-led manufacturing and service sector growth, which is more "home-grown" in nature (i.e. it starts from a realistic base), is likely to be more consistent with a country's initial conditions and comparative advantage in exports; hence, it can lead to broad-based growth. This type of transformation was seen in Thailand in the 1960s and 1970s and in China in the 1980s, during the early periods of sustained rapid growth in these countries. Moreover, this industrialization path is often more labor-intensive and usually creates strong linkages with the rest of the economy, particularly with agriculture, by using agricultural materials as inputs. In fact, manufacturing often develops in rural areas as rural non-farm activities, and the creation of rural manufacturing has often played an important role in poverty reduction and rural transformation.

While a home-grown manufacturing sector was a key driver in the transformations of many Asian countries, including Thailand, it also became a leading export sector in some cases. "Home-grown" does not imply an inward-orientation and a bias against foreign direct investment, but rather is consistent with a country's existing comparative advantage and therefore has great potential to become export-oriented (more so perhaps than sectors created by import substitution policies). With additional economic policies designed to attract foreign direct investment, home-grown manufacturing can draw more foreign capital, technology, and knowledge, which can then spark rapid growth and make the sector internationally competitive. Thailand's experience shows that reaching international competitiveness in manufacturing highly relates to the way a country explores its comparative advantage at different development stages. At the initial stage of transformation, less capital-intensive manufacturing sectors are usually more competitive; as they do not necessary operate at the technological frontier. However, even at this stage, public investments in infrastructure and improvements of the institutional environment for doing business are critical. A more productive labor force, a large portion of which comes from rural areas, together with internationally competitive wage rates, also seems to be important for success.

Sixth and finally, many African countries today have a much smaller formal manufacturing sector (as a share of the economy) than the successful countries reviewed in this paper did at their initial stage of transformation. Moreover, the wage rate in this sector is often not internationally competitive compared with the sector's labor productivity. This clearly poses a challenge for many African countries in their quest to make manufacturing the leading sector in transformation. The majority of the manufacturing sectors in African countries were created by strong government interventions during the 1970s and 1980s.

This manufacturing is therefore often less efficient and competitive even in the domestic markets. However, informal manufacturing and related services have grown rapidly in both rural and urban areas in many African countries and deserve more attention in the process of transformation. This informal sector is often referred to as the "traditional sector," as described in Lewis' dual economy theory (Stifel and Thorbecke 2003), but the formal-informal dichotomy remains a subject of ongoing debate in the literature (see, for example, Guha-Khasnobis et al. 2005 for a review).

Without getting into this debate in detail, we argue that many informal manufacturing activities have the potential to scale-up and become important growth components in African countries. This scaling-up can be driven by domestic or international capital and entrepreneurs, and will require significant improvements in the business environment. For example, the handloom sector in the cotton production area of Southern Ethiopia and the automobile part sector in the Magazine area of Ghana can be called informal, and have not been properly included in the countries' manufacturing sector statistics. Many similarities exist between these examples and the textile and clothing industries in rural China, and the Christmas gift-producing sector in rural Thailand during the early stages of transformation in these countries. One important commonality is that these manufacturing activities are customized to the countries' initial comparative advantages. In addition, these activities were established despite a series of initial disadvantages, such as a lack of financial capital and the existence of many other market and institutional barriers. While similar constraints are faced by both formal and informal sectors, the informal sector often performs better than its formal counterpart in overcoming such initial constraints, and many informal enterprises have been established in extremely difficult economic and policy environments. Given this dynamic history, these enterprises are likely to reach their full potential if governments take supportive policy and investment action to improve the private sector's business environment (i.e. for formal and informal groups). For example, improving infrastructural conditions such as electricity and road access in the case of Ethiopia and removing credit constraint in the case of Ghana should allow the abovementioned informal manufacturing enterprises to grow rapidly, given the existence of a strong and growing demand from domestic markets. In this process, enterprises might also seek to establish links to the international market and attract foreign capital, technology and knowledge. Many textile and clothing products imported by the E.U., US and other developed countries today originate from Chinese villages, and some are even produced in farmers' houses. Similarly, the cradle of Thailand's Christmas gift industry can quite adequately be found in rural Thailand.

APPENDIX

Table A.1. List of low-middle-income countries

	Initial GDP pc (the first year in 1960s or 70s with data available)	GDP pc (current US$)	GDP pc in 2005 (current US$)
Countries with GDP pc around $200 in 1960s or 1970s			
Indonesia	1967	55	1,302
China	1960	92	1,713
Thailand	1960	104	2,750
Swaziland	1960	108	2,414
Cameroon	1960	117	1,034
Congo, Rep.	1960	131	1,273
Nicaragua	1960	141	954
Egypt, Arab Rep.	1960	149	1,207
Sri Lanka	1960	149	1,196
Paraguay	1960	152	1,242
Morocco	1960	175	1,711
Honduras	1960	177	1,151
Syrian Arab Republic	1960	186	1,382
Bolivia	1960	200	1,017
Tunisia	1961	202	2,860
Dominican Republic	1960	208	3,317
Brazil	1960	208	4,271
Ecuador	1960	228	2,758
Colombia	1960	240	2,682
El Salvador	1960	243	2,467
Iran, Islamic Rep.	1965	250	2,781
Guatemala	1960	252	2,517
Peru	1960	252	2,838
Algeria	1960	252	3,112
Philippines	1960	257	1,192
Countries with GDP pc below $400 in 1960s or 1970s			
Fiji	1960	285	3,219
Kiribati	1970	292	772
Guyana	1960	299	1,048
Suriname	1960	343	2,986
Tonga	1975	353	2,090
Countries with GDP pc above $400 in 1960s or 1970s			
Jamaica	1960	429	3,607
Jordan	1965	532	2,323
Vanuatu	1979	1,046	1,611

Table A.1.Continued

	Initial GDP pc (the first year in 1960s or 70s with data available)	GDP pc (current US$)	GDP pc in 2005 (current US$)
Countries for which data are not available from 1960s or 1970s			
Albania			2,678
Angola			2,058
Armenia			1,625
Azerbaijan			1,498
Belarus			3,024
Bosnia and Herzegovina			2,546
Bulgaria			3,443
Cape Verde			1,940
Djibouti			894
Georgia			1,429
Kazakhstan			3,772
Lesotho			808
Macedonia, FYR			2,835
Maldives			2,326
Marshall Islands			2,282
Micronesia, Fed. Sts.			2,097
Moldova			694
Namibia			3,016
Samoa			2,184
Serbia and Montenegro			3,251
Turkmenistan			1,669
Ukraine			1,761
West Bank and Gaza			1,107

Source: WDI 2007.

Note: Fifty-eight countries are listed as low-middle-income, but recent data are not available for some, such as Cuba and Iraq.

Table A.2. List of upper-middle-income countries

	Initial GDP pc (the first year in 1960s or 70s with data available)	GDP pc (current US$)	GDP pc in 2005 (current US$)
Countries with GDP pc around $200 in 1960s or 1970s			
Botswana	1960	53	5,846
Oman	1960	78	9,584
St. Vincent and the Grenadines	1960	161	3,612
St. Kitts and Nevis	1960	242	9,438
Libya	1960	258	6,621
Countries with GDP pc below $400 in 1960s or 1970s			
Seychelles	1960	288	8,209
Gabon	1960	291	5,821
Malaysia	1960	300	5,142
Belize	1960	308	3,786
Mexico	1960	353	7,454
Panama	1960	369	4,786
Barbados	1960	379	11,465
Costa Rica	1960	381	4,627
Countries with GDP pc above $400 in 1960s or 1970s			
South Africa	1960	422	5,109
Hungary	1968	456	10,830
Uruguay	1960	490	4,848
Dominica	1977	507	3,938
Turkey	1968	541	5,030
Chile	1960	551	7,073
Grenada	1977	584	4,451
Trinidad and Tobago	1960	635	11,000
St. Lucia	1979	907	5,007
Venezuela, RB	1960	1,136	5,275
Argentina	1962	1,149	4,728
Countries for which data is not available in 1960s or 1970s			
Croatia			8,666
Czech Republic			12,152
Equatorial Guinea			6,416
Estonia			9,733
Latvia			6,879
Lebanon			6,135
Lithuania			7,505
Mauritius			5,059
Palau			7,197
Poland			7,945
Romania			4,556
Russian Federation			5,336
Slovak Republic			8,616

Source: WDI 2007.

Note: Forty countries are listed as upper-middle-income, although recent data are not available for some, such as American Samoa, Mayotte and the Northern Mariana Islands.

Table A.3. List of low-income countries

	Year with initial GDP pc available	GDP pc in that year (current US$)	GDP pc in 2005 (current US$)
Burundi	1960	67	106
Congo, Dem. Rep.	1960	217	123
Ethiopia	1981	187	157
Malawi	1960	46	161
Liberia	1960	181	167
Guinea-Bissau	1970	135	190
Sierra Leone	1960	122	216
Eritrea	1992	156	220
Rwanda	1960	41	238
Niger	1960	130	244
Zimbabwe	1960	281	259
Madagascar	1960	125	271
Nepal	1960	51	272
Uganda	1960	64	303
Gambia	1966	106	304
Tanzania	1986	208	316
Mozambique	1980	293	335
Central African Republic	1960	73	339
Guinea	1986	348	350
Tajikistan	1990	496	355
Timor-Leste	2000	404	358
Togo	1960	77	358
Burkina Faso	1960	74	391
Mali	1967	55	392
Bangladesh	1965	103	423
Cambodia	1960	117	440
Sao Tome and Principe	1970	290	451
Kyrgyz Republic	1990	605	475
Ghana	1960	171	485
Lao PDR	1984	498	485
Haiti	1960	71	500
Benin	1960	98	508
Uzbekistan	1990	651	533
Kenya	1960	98	547
Chad	1960	102	561
Mauritania	1960	91	603

Table A.3. Continued

	Year with initial GDP pc available	GDP pc in that year (current US$)	GDP pc in 2005 (current US$)
Zambia	1960	222	623
Solomon Islands	1967	173	624
Vietnam	1985	239	631
Comoros	1980	369	645
Senegal	1960	193	707
Pakistan	1960	81	711
Yemen, Rep.	1990	399	718
India	1960	83	736
Mongolia	1981	1,348	736
Nigeria	1960	103	752
Sudan	1960	98	760
Papua New Guinea	1960	111	840
Cote d'Ivoire	1960	154	900
Bhutan	1980	268	1,325

Source: WDI 2007.

Note: Fifty-four countries are listed as low-income, but recent data are not available for some, such as Afghanistan, Korea, Dem. Rep., Myanmar and Somalia.

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